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November 2013

Lactarius Notebook 21

L. R. Hesler

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N. J. Smith - 1403

LACTARIUS LIGNYOTUS var. ~~PARVULUS~~

canadensis

Huron Mts., Marquette Co., Michigan, August 10, 1968

Notes by N. J. Smith

Pileus (about 6 cm broad) depressed, umbonate, ^{F?} 7-7-7 to 6-D-5
(Methuen) (dark brown). Latex white becoming pinkish; odor and taste
mild.

Lamellae ochraceous buff, faintly marginate, subdistant.

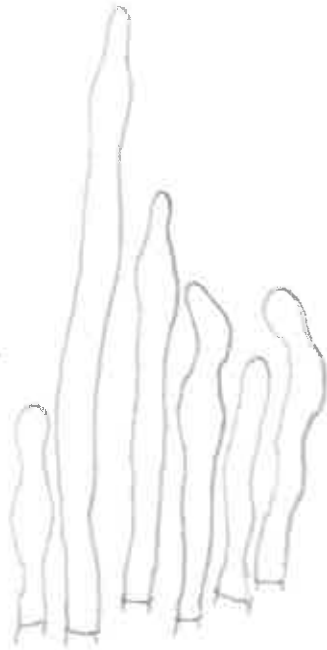
Stipe paler brown than pileus.

Notes by Heslef

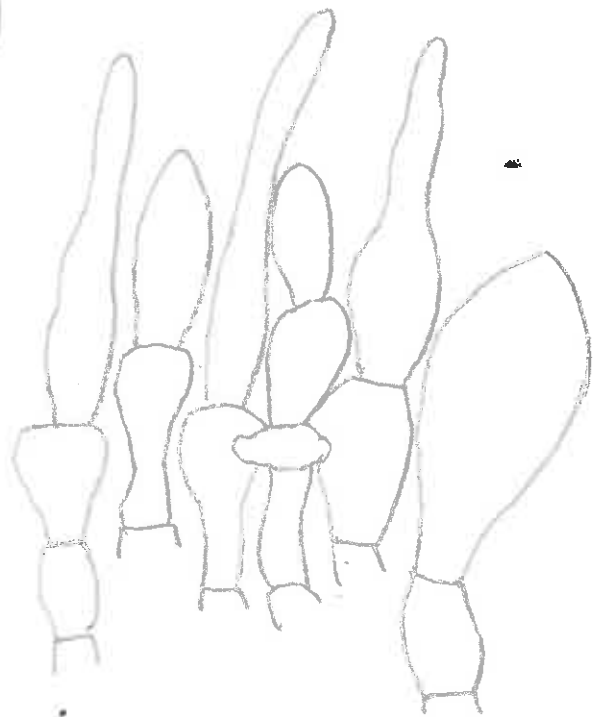
Spores 8.5-11 x 8.5-10 μ , globose to subglobose, warts 0.7-1.5 μ
high, bands and lines forming a partial to more or less complete reticulum.
Pleurocystidia none; cheilocystidia 30-55(83) x 3-6 μ , filamentous, at
times enlarged at middle or above, extending up sides up to 200 μ .
Pileus cuticle of brown, enlarged, cuneate, vesiculose, ellipsoid cells,
bearing pileocystidia 30-55 x 8-11 as terminal elements. Stipe cuticle of
interwoven cells bearing a turf of brownish, filamentous, caulocystidia
with no enlarged basal cells.

This is a bit large for var. parvulus but the micro characters seem
to place it here.

Pectarius lignyotus var. ^{canadensis} ~~parvulus~~
N.J. Smith - 1403



Ch - x 1000



Pileus cuticle
- x 1000

Sm-21903

LACTARIUS LIGNYOTUS var. ~~PARVULUS~~

canadensis

In cedar bog, Rees' Bog, Cheboygan Co., Michigan, July 29, 1946

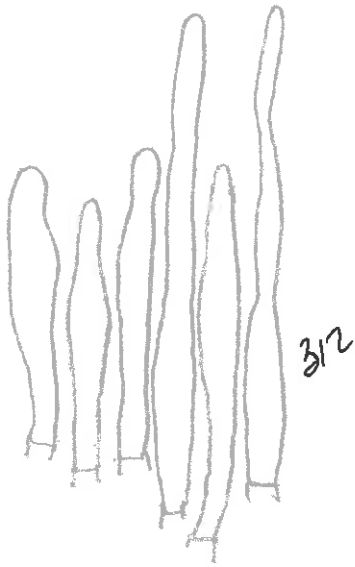
Holotype

(of *parvulus*)

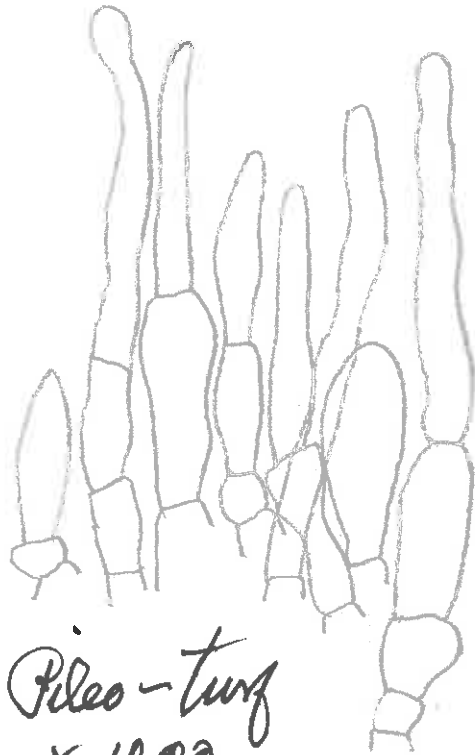
Spores 9-11 x 8-11 μ , globose or subglobose, warts 1.0-2.0 μ high, often rod-like and curved, bands and lines forming a partial reticulum, with some webbing. Basidia 52-76 x 9-11 μ , 4-spored. Pleurocystidia none, except cheilocystidia extending up sides, more or less 200 μ ; pseudocystidia filamentous; cheilocystidia 36-64 x 4-7 μ , cylindric to more or less ventricose. Gill trama of short-celled, subparallel hyphae. Pileus trama vesiculose. Pileus cuticle of enlarged, ventricose or clavate cells, bearing pileocystidia as terminal elements, 24-52 x 4-8 μ , which form a turf, arising from ~~interwoven hyphae~~ ^{enlarged cells}. Stipe cuticle a turf of caulocystidia, 24-90 x 5-8 μ , borne as terminal elements on erect hyphae; rosettes present. Clamp connections present.

Lactarius liquoratus var. ^{*canadensis*} ~~*parvulus*~~

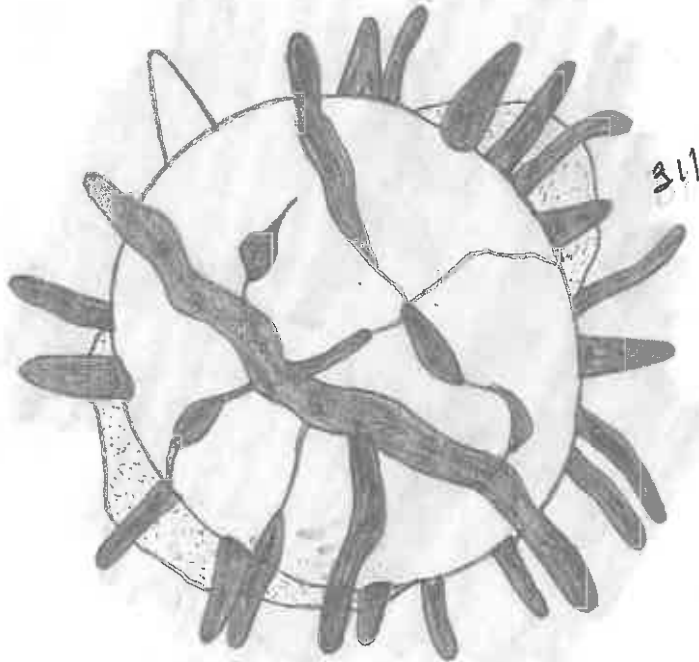
Sm. 21903 - Holotype (of var. *parvulus*)



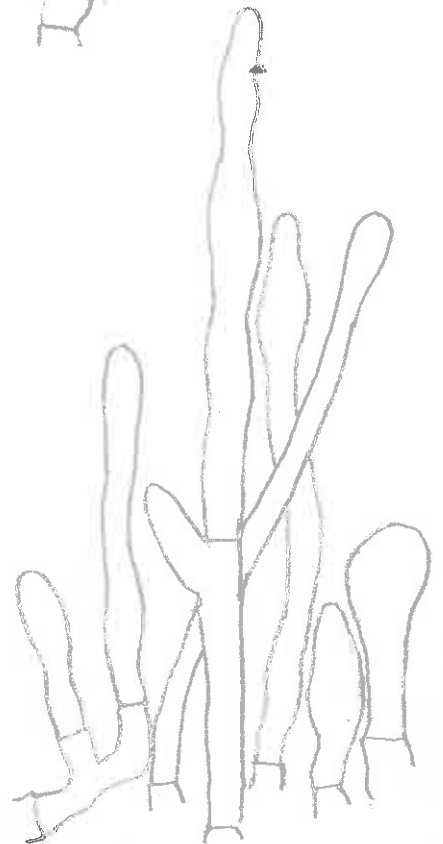
Ch - x 1000



Pileo-turf
x 1000



Spore - x 8000



Caulo-turf - x 1000

11346

LACTARIUS LIGNYOTUS var. ^{canadensis} ~~PARVULUS~~ Sm. & Hes.

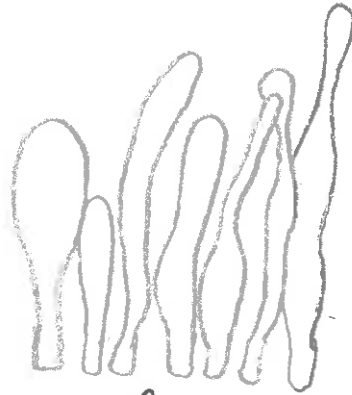
On soil under spruce, Newfound Gap, N.C., (also as Sm - 7372),
September 4, 1937.

Spores 8-11 x 8-10 μ , globose or subglobose, warts 1.0-2.0 μ high, broad and narrow bands forming a reticulum. Basidia 46-53 x 11-12 μ , 4-spored. Pleurocystidia 37-62 x 5-7 μ , fusoid, cylindric, at times with a neck and capitellum, rare, within 100 μ of edge; pseudocystidia similar to those of L. lignyotellus; cheilocystidia 23-52 x 3-10 μ , clavate, cylindric-clavate, sub-spathulate, flask-shaped with a neck and capitellum, conspicuous. Gill trama of short-celled, slightly interwoven hyphae. Pileus trama vesiculose. Cuticle of pileus a trichodermium with a turf of filaments (pileocystidia), 18-53 x 5-11 μ , as brownish terminal elements on a row of 3-5 cells, in turn borne on colorless interwoven hyphae. Cuticle of stipe also a trichodermium similar to that of the pileus, the terminal elements as caulocystidia, 18-90 x 5-11 μ , cylindric, clavate, ventricose. Clamp connections none.

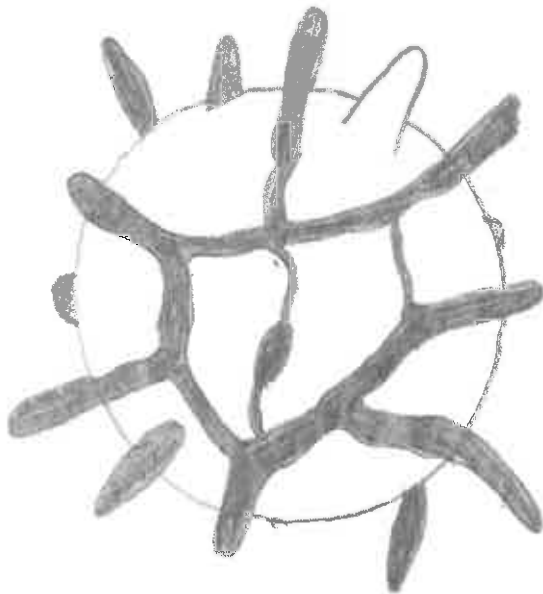
Pactaricus lequytus var. ~~*parvulus*~~ *Em. & Hes.*
canadensis
11346



Pl - x 1000



Ch - x 1000

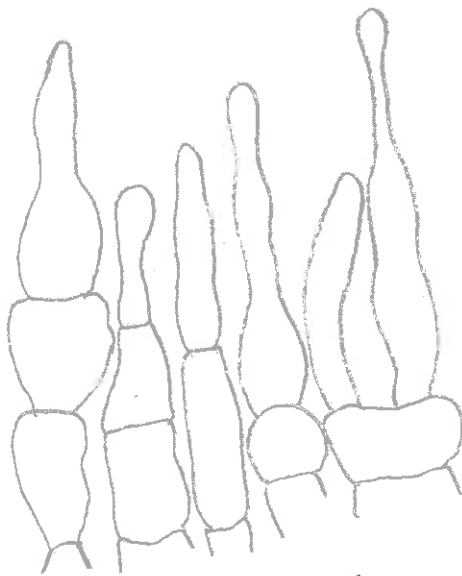


Spore - x 8000

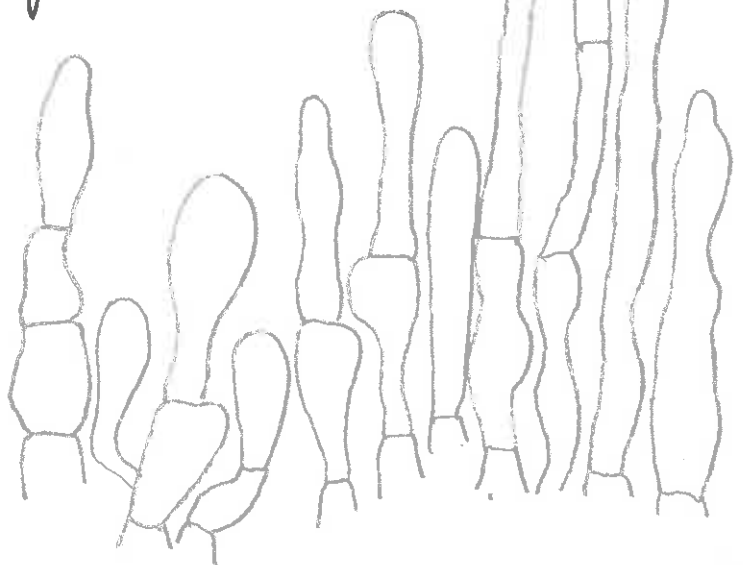
[more, next sheet]

Sactarius lequytus var. ~~parvulus~~ - (cont)
11346 *canadensis*

[more, another sheet]



Pileo turf + cells - x 1000

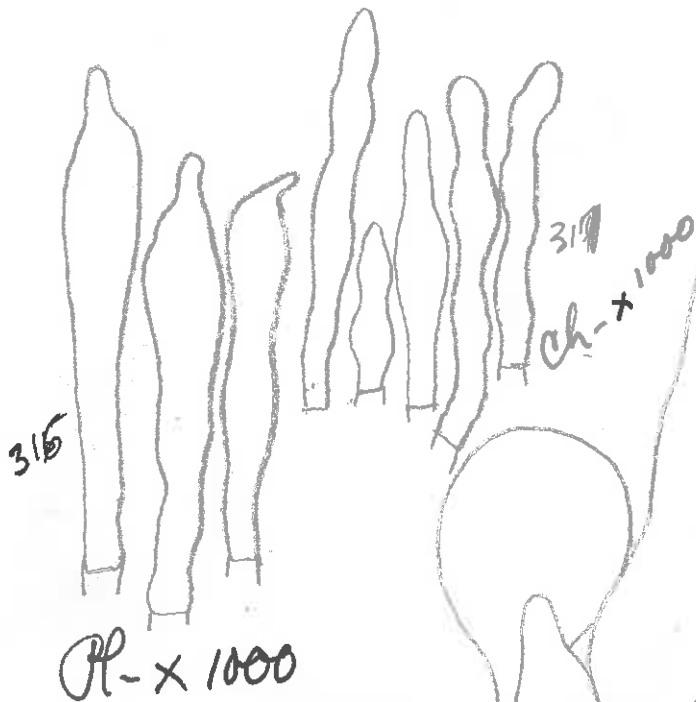


Caulo turf - x 1000

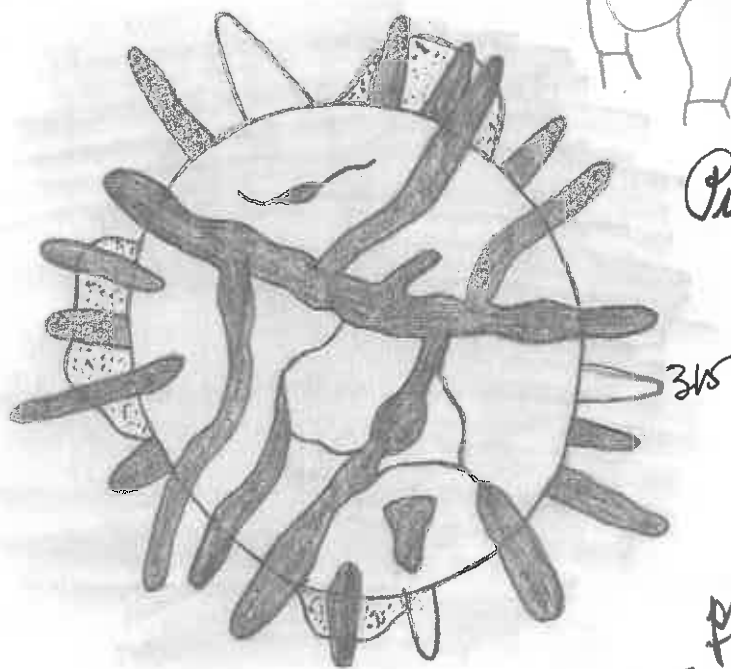
Fachrus lignyotus var. *canadensis*
~~*fallax* var. *concolor*~~

F. lignyotus v. *canadensis*

Sm- 63952 - (Holotype of
lignyotus v. *canadensis*)

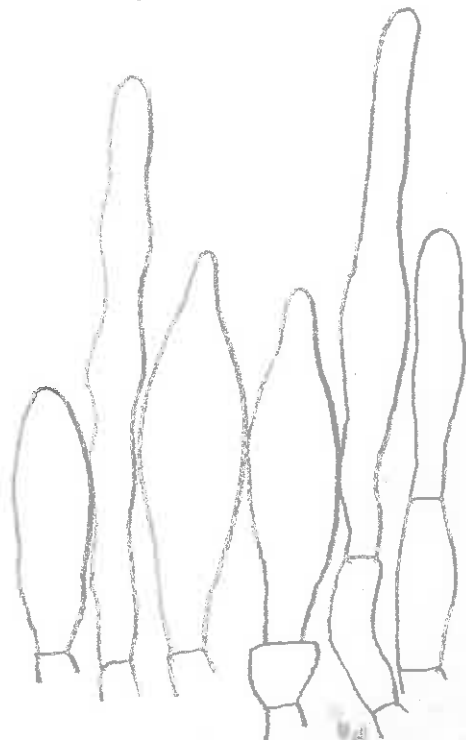


Pileus-cuticle turf - x1000



Spore - x8000

All
pseudo
Bigelow-13670



Stipe cuticle turf - x1000

Ammirati - 1421 LACTARIUS LIGNYOTUS var. CANADENSIS

Huron Mt. Club, Marquette Co., Michigan, August 12, 1968

Notes by Ammirati

Pileus "Prouts brown" to "cinmamon brown." Latex staining reddish brown, taste and odor mild.

Notes by Hesler

Spores 8-11 x 8-10.5 μ , globose to subglobose, warts 1.0-2.4 μ high, bands and lines forming a partial reticulum. Pleurocystidia none; cheilocystidia 30-56 x 5-6 μ , more or less cylindric, some brownish, rarely septate, rarely forked. Pileus cuticle and stipe cuticle as in Type.

Sm-1863

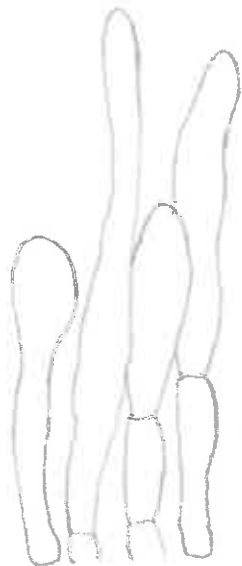
LACTARIUS LIGNYOTUS var. CANADENSIS

Marquette Co., Michigan, September 2, 1965.

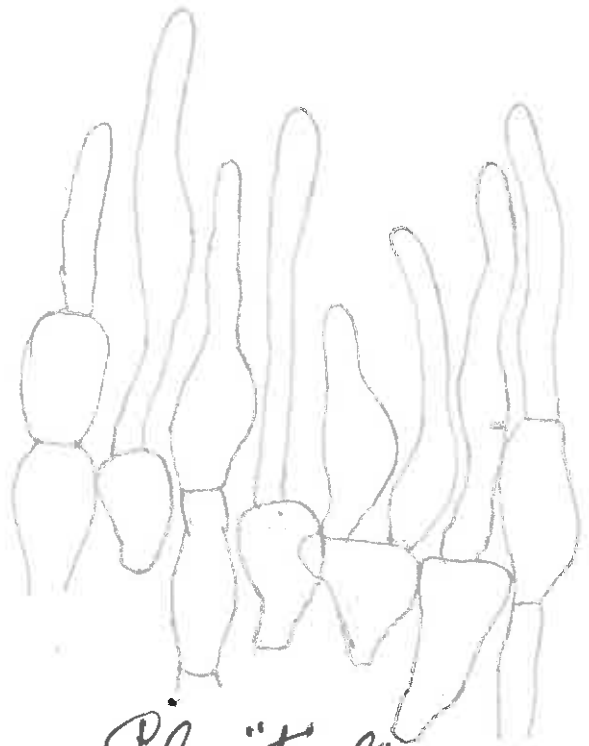
Spores 8.5-10(11) x 8-9(9.5) μ , globose or subglobose, warts 0.7-1.5(2) μ high, bands forming only a partial or no reticulum. Basidia 52-60 x 9-12 μ , 2-4-spored. Pleurocystidia none; pseudocystidia filamentous, crooked; cheilocystidia 40-70 x 5-8 μ , cylindric, clavate or subventricose, at times septate, brown. Gill trama of irregular cells. Pileus trama vesiculose. Pileus cuticle of large brown cells bearing a turf of brown pileocystidia, forming a loose turf and a loose but scarcely a pseudoparenchyma, the pileocystidia often borne by enlarged cells. Stipe cuticle of hyphae bearing a turf of brown caulocystidia, 30-125 x 5-8 μ , often in tufts, occasionally septate; rosettes present - clamps none.

Factarium lignyotus var. *canadensis*

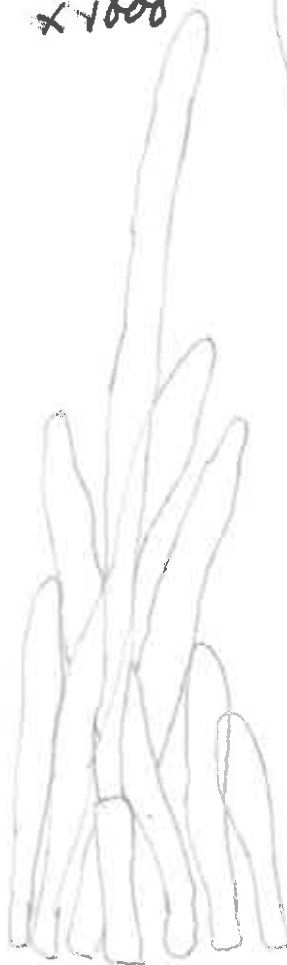
N.J. Sm - 1863



Ch-
x 1000



Piles - "turf"



caul tuft (turf)
- x 1000

Bigelow - 13670 LACTARIUS LIGNYOTUS var. CANADENSIS

On moss, under spruce, Mt. Mansfield, Stowe, Vermont, August 29, 1964

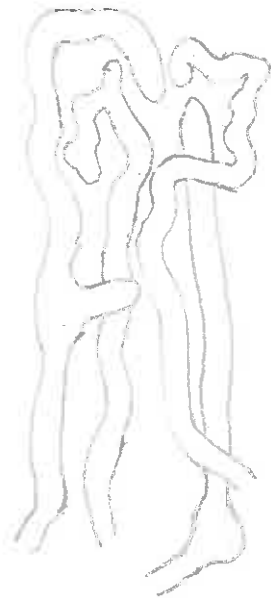
Notes by Bigelow

Pileus disc "snuff brown," margin "mummy brown," rugose, with a small acute umbo. Lamellae marginate-fuliginous, pale yellow orange on faces, subdistant. Stipe "saccardo's umber."

Notes by Hesler

Spores 8.5-10.5 x 8-10.5 μ , globose or subglobose, warts 0.8-2.0 μ high, bands and lines forming a partial or no reticulum, bands often catenulate. Pleurocystidia none; pseudocystidia filamentous, usually more or less crooked above, conspicuous, at times numerous; cheilocystidia 40-53 x 5-7 μ , cylindric, often extending along the sides up to 250 μ . Pileus and stipe cuticle as described (Brittonia 14: 398), except there is a subcuticular, colorless, gelatinous zone.

Lactarius lignyotus var. *canadensis*
Bigelow - 13670



Pseudo -
x 1000

Sm-33136

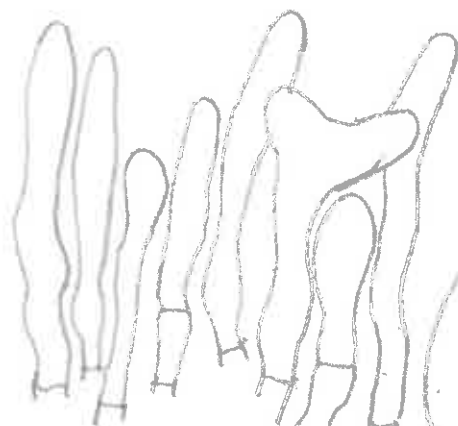
Lignystus v. *Canadensis*
LACTARIUS ~~GRACILENTUS~~ ~~Smith & Hervey~~

Sugar Island, Michigan, August 19, 1949

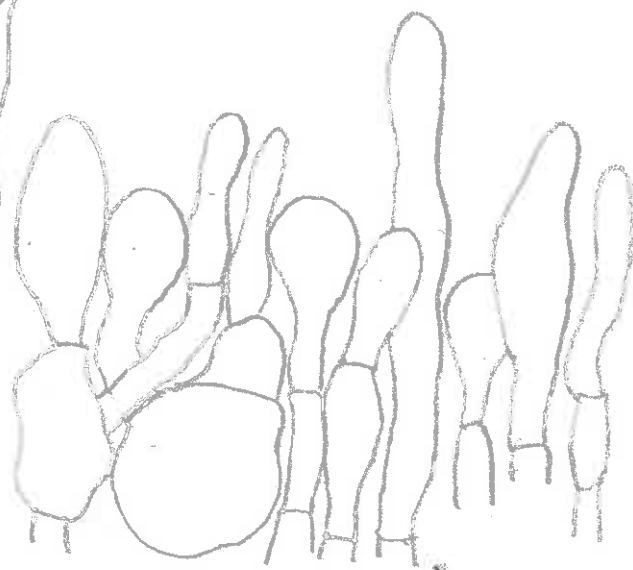
Holotype

Spores 9-11 x 8.5-10 μ , globose to subglobose, warts 1-2 μ high, rod-like or conic, some crooked, bands widely spaced, a few lines. Basidia 56-62 x 10-12 μ , 4-spored. Pleurocystidia none; cheilocystidia 35-52 x 5-7 μ , filamentous, clavate, at times septate, more rarely forked. Gill trama subparallel. Pileus cuticle of enlarged cells, bearing a turf of pileocystidia, variously shaped, flask-shaped, ventricose, pyriform, clavate, cylindric, 22-70 x 5-12 μ , some septate. Stipe cuticle a turf of caulocystidia, 15-54 x 3-12 μ , clavate, ventricose, flask-shaped; rosettes present. Clamps none.

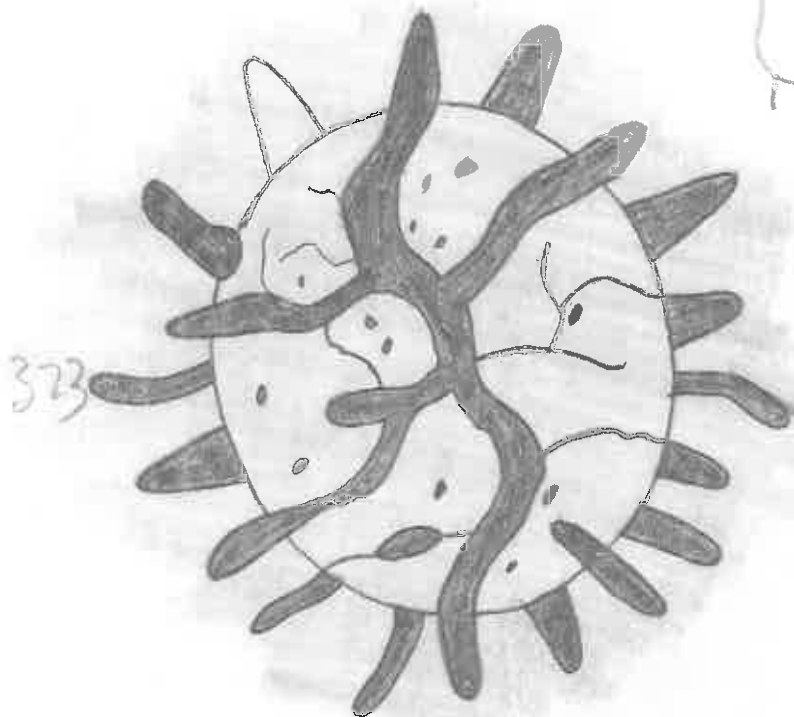
Plectarimus gracilentus
~~*ligyotus*~~ v. *canadensis*
 Sm - 38136 - Holotype (of
P. gracilentus)



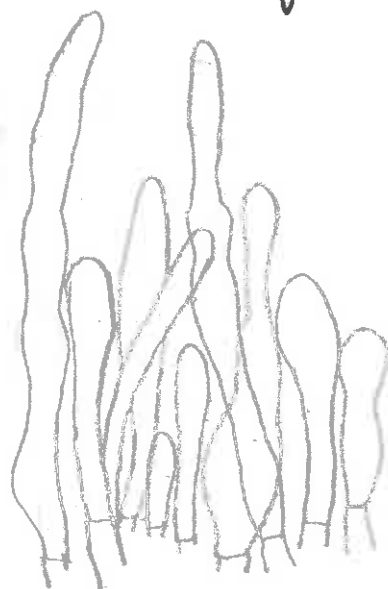
Ch - $\times 1000$



Pileo-turf - $\times 1000$



Spore $\times 8000$



Caulo-turf
 $\times 1000$

35126

Lignyotus v. canadensis
~~LACTARIUS GRACILENTUS Sm. & Hes.~~

On soil, in hemlock woods, Roaring Fork road, GSMNP, leg. Ron Petersen,
July 25, 1969

Pileus 12-24 mm broad, blackish when young then dark brownish, acutely umbonate, umbo and disc black and remaining so, rugulose on center. Context white; odor slightly pungent, taste mild. Latex white, drying "rosolane pink" on the gills, staining gills dingy brownish, taste mild.

Lamellae adnate-decurrent, whitish then creamy, edges smoky brownish, nearly subdistant, medium broad, staining dingy brownish by latex where bruised.

Stipe 2.5-4 cm long, 3-4 mm thick, concolorous, solid or stuffed, equal or slightly enlarged below.

Spore print failed; spores 8.5-11 x 8.5-10 μ , globose to subglobose, warts 1-2 μ high, with webbing interspersed, bands (broad and narrow) and branches forming a partial reticulum. Basidia 48-60 x 10-13 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, apices at times enlarged or even forked, present on sides of gills and in pileus cuticle; cheilocystidia 30-42 x 5-7 μ , cylindric to subventricose or subclavate. Pileus and stipe cuticles as in Type.

canadensis

Sm-57623

LACTARIUS LIGNYOTUS var. ~~INSIGNIS~~

Tahquamenon Falls State Park, Michigan, August 27, 1957

Holotype (of var. insignis)

Spores 9-12.5 x 9-10.5 μ , short ellipsoid, subglobose, or globose, warts 0.8-2.3 μ high, rod-like or robust, bands and lines forming a partial reticulum, an occasional bit of webbing. Basidia 50-58 x 9-11 μ , 4-spored. Pleurocystidia 53-90 x 4-6 μ , filamentous, similar to cheilocystidia, and extending upward from edges about 225-275 μ ; cheilocystidia 38-68 x 4-7 μ , filamentous, cylindric or subventricose. Gill trama of short-celled, interwoven hyphae; subhymenium of small cells. Pileus trama vesiculose. Pileus cuticle more or less an hymeniform layer of brown, clavate to vesiculose cells from and between which filamentous pileocystidia form a turf, 40-90 x 6-11 μ . Stipe cuticle a turf of brownish, filamentous caulocystidia, 32-110 x 3-5 μ , at times lactifers extending into the zone as pseudocaulocystidia; rosettes present. Clamps none.

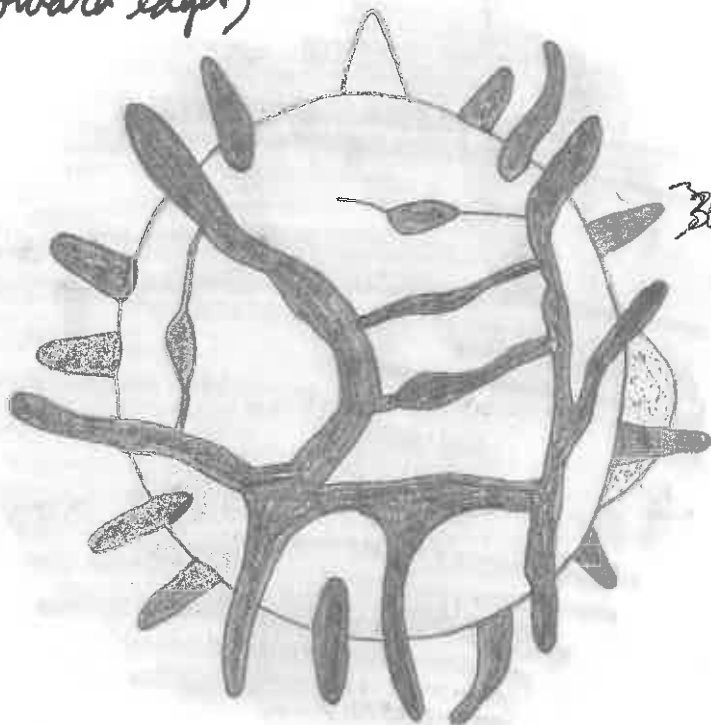
Factarius lequyotus var. canadensis
~~marginatus~~

Sm. 57673 - Holotype (cf. marginatus)

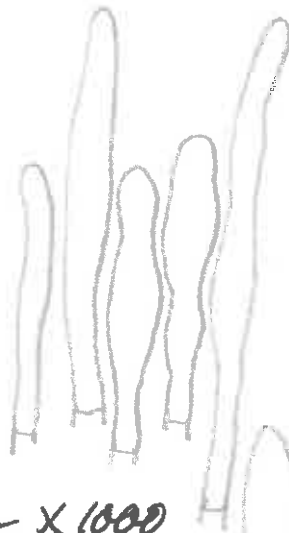


Ch - x 1000

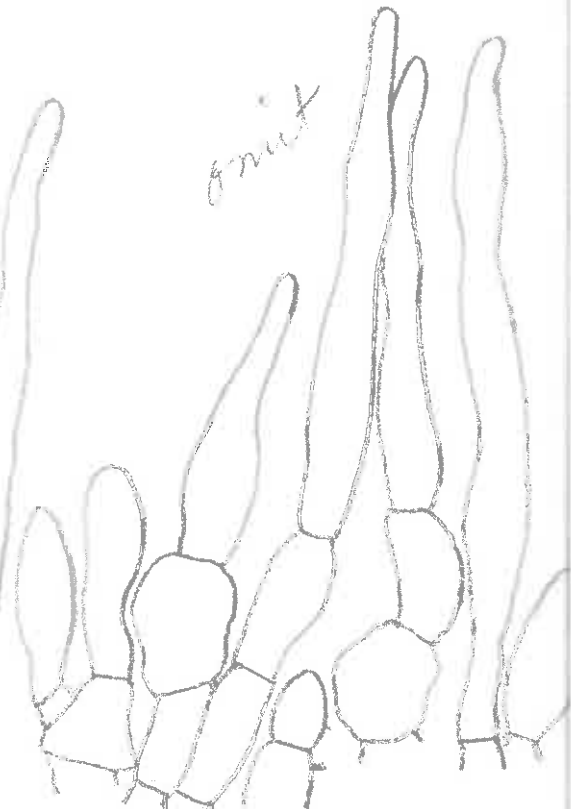
PP - x 1000
(toward edges)



Spore - x 8000



omit



Pileo turf - x 1000

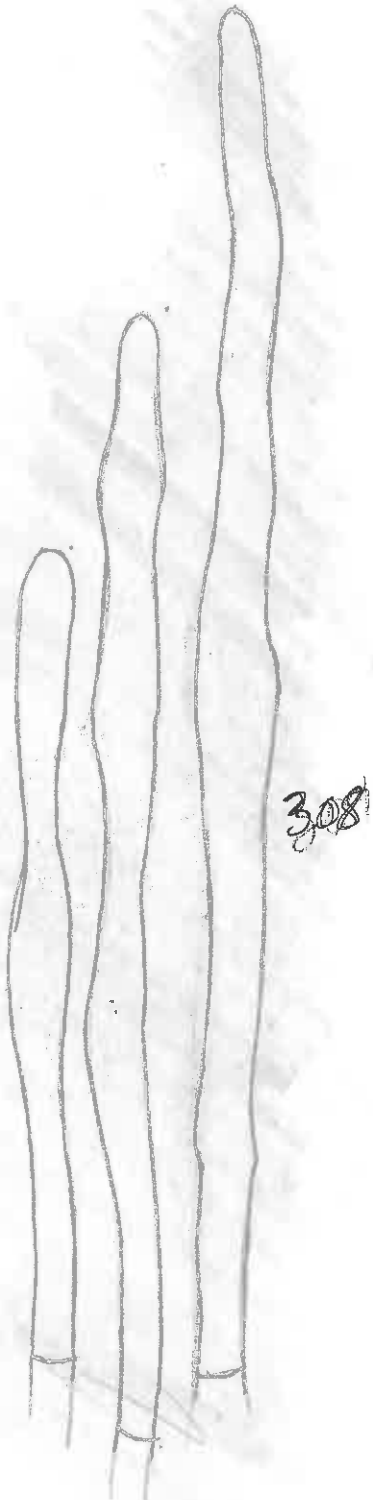


omit

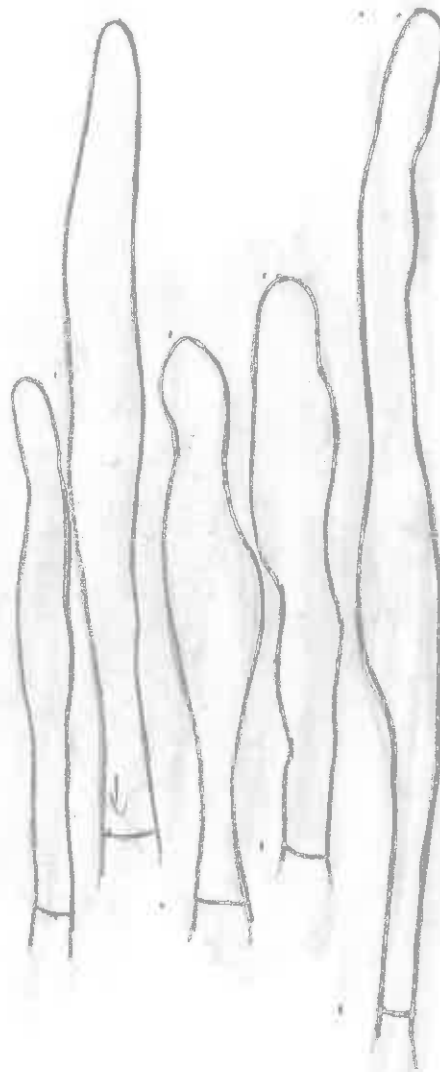
Caulo-turf x 1000

Lactarius lignyotus var. insignis

Sm - 57623 - Holotype



Pl - x 2000



Ch - x 2000

Sm-63896

LACTARIUS LIGNYOTUS var. CANADENSIS

Pike Lake Bog, Luce Co., Michigan, August 12, 1961.

Notes by Smith

Pileus 1-2 cm broad, dark-sepia, at times umbonate. Context whitish, staining salmon; taste mild. Latex white, stains salmon.

Lamellae adnate with a decurrent tooth, distant, broad, faintly margined when young, color obscure at maturity.

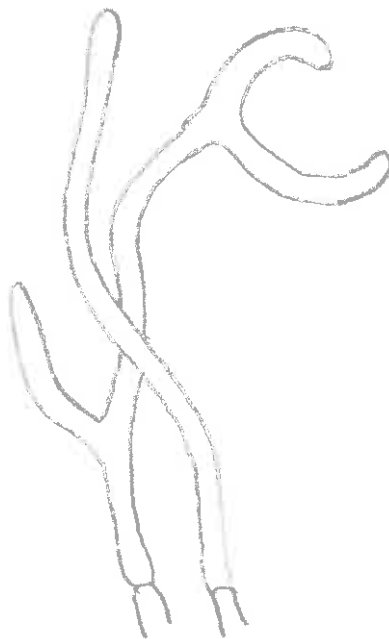
Stipe 4-5 cm long, 2.5-4 mm thick at apex, dark-sepia, more or less enlarged and whitish at base.

Notes by Hesler

Spores 8-10(11) x 7-9(10) μ , globose or subglobose, warts 1.0-2.0 μ high, narrow and broad bands forming a reticulum. Basidia 54-63 x 11-13 μ , 4-spored. Pleurocystidia none; pseudocystidia as crooked, often forked and branched, projecting; cheilocystidia 36-60 x 5-8 μ , cylindric, clavate, ventricose. Pileus trama vesiculose. Pileus cuticle as chains of more or less vesiculose cells, terminal elements as pileocystidia, 35-108 x 7-15 μ , cylindric, clavate, flask-shaped with a neck which is more or less constricted--forming a turf. Stipe cuticle of repent hyphae bearing a turf of rather slender caulocystidia, 34-68 x 3-8 μ , cylindric to subventricose; cortex (outer) with rosette cell-groups.

Factarius lignyotus var. *canadensis*

Sm. 63896



Pseudo - x 1000

LACTARIUS LIGNYOTUS var. CANADENSIS

Sm-63952

PHOTO

Tahquamenon, Michigan, August 18, 1961

Type

Spores in deposit near "pinkish buff," $9.5-12 \times 9-10.5 \mu$, sub-globose, globose, to broadly ellipsoid, warts $1.0-2.4 \mu$ high, many rod-shaped, occasionally non-amyloid with rather indistinct or distinct wings, bands and a few lines forming a partial reticulum, Basidia $42-64 \times 9-12 \mu$, clavate, 4-spored. Pleurocystidia $52-66 \times 8-12 \mu$, more or less clavate, usually more or less devoid of contents, rare; pseudocystidia filamentous, apices sometimes coiled or branched; cheilocystidia $38-48 \times 4-7(9) \mu$, ventricose to filamentous-cylindric, sometimes brownish, often slightly constricted, not abundant and not extending up the sides. Gill trama of narrow, subparallel hyphae. Pileus trama vesiculose. Pileus cuticle a staggered layer of short chains of vesiculose cells, $18-50 \times 10-25 \mu$, the terminal elements more or less cylindric to flask-shaped, $20-70 \times 7-18 \mu$, forming a turf. Stipe cuticle a turf of caulocystidia of different shapes: cylindric, $38-80 \times 5-8 \mu$, often slightly constricted; ventricose or subfusoid, $33-56 \times 11-15 \mu$; subclavate $32-40 \times 5-8 \mu$; rosettes present. Clamp connections none.

Lignyotus v. canadensis

~~GRACILENTUS~~ ~~XXXXXXXXXX~~

Sm-67574 LACTARIUS ~~LIGNYOTUS~~ ~~XXXX~~ ~~CANADENSIS (n)~~

Rifle River, Rose City, Michigan, September 7, 1963

Notes by Smith

Pileus color as in *Lignyotus*; flesh reddish brown where cut.
Taste mild. Gills distant, marginate. Stipe flesh reddish when cut.

Spores yellowish.

Notes by Hesler

Spores 9-11 x 9-11 μ , glbbose to subglobose, warts 1-2.4 μ high, bands rather widely spaced.. Pleurocystidia none; pseudocystidia 2-3 μ broad, filamentous; cheilocystidia 27-50 x 4-7 μ , more or less cylindric or subventricose, rather abundant. Pileus cuticle of short, chains of vesiculose cells; pileocystidia 20-65 x 6-12 μ , cylindric to ventricose, forming a turf. Stipe cuticle interwoven; caulocystidia forming a turf, 38-65 x 5-10 μ , cylindric to ventricose; rosettes present.

[Material not fully mature, spores rare; I do not feel entirely satisfied with my identification.]

Sm-67591

LACTARIUS LIGNYOTUS var. CANADENSIS

Rifle River Area, Lupton, Michigan, September 15, 1963.

Notes by Smith

Pileus blackish brown. Gills distant, edges colored, stain reddish.
Taste mild.

Spore deposit yellowish.

Notes by Hesler

Spores 9-11(12) x 8-10(11) μ , warts 0.8-2.0 μ high, bands forming a reticulum. Pleurocystidia none; pseudocystidia present; cheilocystidia 25-60 x 3-8 μ , cylindric, clavate. Pileus cuticle chains of cells, the terminal elements as pileocystidia, 23-78 x 7-15 μ , cylindric, jug-shaped, forming a turf. Stipe cuticle of caulocystidia as a turf, 30-88 x 5-12 μ , cylindric, clavate, ventricose. Stipe cortex (outer) with rosette cell-groups.

Sm - 67605 (and 67608) LACTARIUS LIGNYOTUS var. CANADENSIS

Rifle River Area, Rose City, Michigan, September 15, 1963

Notes by Smith (supplemented)

Pileus 4-8 cm, convex, then slightly depressed, bistre to snuff brown, rugulose, only faintly velvety, glabrous and wrinkled in age. Latex white, drying vinaceous red on gills, mild.

Gills milk-white becoming straw color, faintly marginate when young, edges soon concolorous, distant.

Stipe 4.5-10 cm long, 6-10 mm thick, bistre to snuff brown, plicate above, faintly velvety.

Spores in deposit: pinkish buff.

Notes by Hesler

(There are two labels for one collection of some 20 basidiocarps: Sm-67605, with notes; and Sm-67608. The latter says: "see label 67605.")

Spores 8-11 x 8-11 μ , globose to slightly subglobose, warts usually coarse and blunt, 1-2.3 μ high, bands and lines forming a partial reticulum. Basidia 54-66 x 10-13 μ , 4-spored. Pleurocystidia none, often cheilocystidia extend up sides 200 μ ; pseudocystidia filamentous 3-4 μ ; cheilocystidia 34-48 x 4-7 μ , more or less cylindric. Pileus cuticle more or less staggered chains of vesiculose, brown cells, the terminal elements as pileocystidia, 30-70 x 6-12 μ , cylindric, ventricose, forming a turf. Stipe cuticle interwoven, bearing a turf of brown caulocystidia, 28-52 x 4-8 μ , more or less cylindric or ventricose; rosettes present. Clamps none.

Sm-67606

LACTARIUS LIGNYOTUS var. CANADIENSIS (NOTES: 67605)

Rifle River, Rose City, Michigan, September 15, 1963

Notes by Hesler

Spores 9-11.5 x 8.5-11 μ , globose to slightly subglobose, warts 0.8-2.0 μ . Pleurocystidia none; pseudocystidia filamentous, 3-5 μ broad, at times the apex crooked-branched; cheilocystidia 35-47 x 4-8 μ , cylindric, subventricose. Pileus and stipe cuticles as in 67605.

Sm-67607 LACTARIUS LIGNYOTUS var. CANADENSIS (NOTES: 67605)

Rifle River Area, Rose City, Michigan, September 15, 1963

Notes by Hesler

Micro characters as in Sm-67605.

Sm-67609 LACTARIUS LIGNYOTUS var. CANADENSIS (SEE: 67605)

Rifle River, Rose City, Michigan, September 15, 1963

Notes by Hesler

Micro characters as in 67605.

Sm-72045a

LACTARIUS LIGNYOTUS var. ~~PARVULUS~~

Canadensis

Sugar Island, Michigan, August 10, 1965

Notes by Smith

Pileus about 4 cm, sepia to bistre. Taste mild. Latex stains red, mild. Gills distant, edges grayish. Stipe sepia to bistre.

Spores "pinkish buff."

Notes by Hesler

Spores 9.5-12 x 9-11.5 μ , globose to subglobose, warts 1.4-2.5 μ , bands often catenulate forming a partial reticulum. Pleurocystidia none; cheilocystidia 34-52 x 5-9 μ , cylindric, subclavate, apices rounded or, at times subcapitate, extending up sides 175-230 μ .

Otherwise as in Type.

Sm-72047 LACTARIUS LIGNYOTUS var. CANADENSIS

Sugar Island, Michigan, August 10, 1965

Notes by Smith

Pileus sooty brown. Latex stains red; taste mild. Gills distant, edges grayish. Stipe sooty brown, plicate above.

Spores ochraceous.

Notes by Hesler

Spores 9-11 x 8.5-10.5 μ , globose or subglobose, warts 1.0-2.0 μ high, bands more or less 1 μ broad, forming a partial reticulum. Basidia 52-63 x 9-12 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous; cheilocystidia cylindric, 35-43 x 4-7 μ . Pileus stipe cuticles as in Type.

Raetarius lignyotus var. *canadensis*

Sm-77047



Ch - x 1000

(typically cylindric; but
showing some variations)

Sm-72048

LACTARIUS LIGNYOTUS var. CANADENSIS

Sugar Island, Michigan, August 10, 1965

Notes by Smith (supplemented)

Pileus sooty brown, 3-4 cm. Latex milk-like, stains red. Gills tan, edges gray, distant. Stipe sooty brown, 4.5-5 cm x 5-7 mm.

Spores in deposit: ochraceous.

Notes by Hesler

Spores 8.5-11.5 x 8.5-11 μ , globose or subglobose, warts 1.2-2.5 μ , bands (at times more or less catenulate) forming a partial reticulum. Fleurocystidia none found; cheilocystidia 32-67 x 5-9 μ , cylindric, with a few of variable shapes in each section (see drawing), sometimes septate. Pileus and stipe cuticles as in Type; rosettes in stipe. *

Cf. lignyotus var. catenicystis var. nov., which seems near but different.

Sm-72049

LACTARIUS LIGNYOTUS var. CANADENSIS

Sugar Island, Michigan, August 10, 1965

Notes by Smith

Cap sooty brown. Latex mild, stains red. Gills distant or subdistant, with gray margins.

Spores ochraceous.

Notes by Hesler

Spores 9-11 x 8.5-10.5 μ , globose, subglobose, warts 1.3-2.4 μ .
Otherwise typical.

Sm-72051 LACTARIUS LIGNYOTUS var. CANADENSIS

Sugar Island, Michigan, August 10, 1965

Notes by Smith (supplemented)

Pileus 3-5 cm broad, depressed, velvety, inconspicuously papillate, dark brown (blackish, dried). Flesh thin. Latex milk-like, mild, staining reddish. Gills distant, margins sooty. Stipe 4-7 cm long, 5-8 mm thick, velvety-blackish (dried), equal or base subclavate.

Spores in deposit: ochraceous.

Notes by Hesler

Spores 9-11.5 x 8.5-11 μ , globose or subglobose, warts 1.0-2.0 μ high, slender or stout, webbing inconspicuous, a few warts only partially amyloid, broad bands and lines forming a partial reticulum, at times catemulate. Basidia 52-63 x 11-13 μ , 4-spored. Fleurocystidia none (macrocystidia few, imbedded, basidiiform - Brittonia 14:398); pseudocystidia scattered, filamentous; cheilocystidia 38-43 (70) x 4-7; filamentous, extending up sides (and there longer than on edges) 175-225 μ . Pileus and stipe cuticles as in type.

Sm-72093

LACTARIUS LIGNYOTUS var. CANADENSIS (~~near lign~~)

St. Ignace Bay, St. Ignace, Michigan, August 16, 1965 (near Lignyotus)

Notes by Smith

Pileus 2.5-7 cm broad, bistre to snuff brown, plush-like when young, becoming wrinkled and more or less glabrous in age. Context mild.

Gills broad, subdistant, white then ochraceous in age, edges marginate.

Stipe dark bistre, plicate above, whitish below, flesh vinaceous red where cut.

Spores in deposit "ochraceous buff."

Notes by Hesler

Spores 9-11 x 8-11 μ , globose or subglobose. Otherwise as in Type.

Sm-72442

LACTARIUS LIGNYOTUS var. CANADENSIS

Michigan, August 27, 1965.

Notes by Smith

Pileus bister to sepia. Taste slightly peppery then mild. Gills distant, edges gray. Stipe bister to sepia, stained red at the base.

Spores ochraceous.

Notes by Hesler

Spores 8.5-10.5(11) x 8.5-10(10.5) μ , globose or subglobose, warts 1.0-2.3 μ high, lines and catenulate bands forming a partial to complete reticulum. Pleurocystidia none; pseudocystidia present; cheilocystidia 38-65 x 5-8 μ , cylindric. Pileus cuticle a turf of short cell-chains, the terminal elements as pileocystidia, 30-75 x 6-16 μ , cylindric to flask-shaped. Stipe cuticle a turf, no inflated basal cells, terminal elements as caulocystidia, 40-88 x 5-14 μ , cylindric, spathulate, clavate, flask-shaped. Stipe cortex with rosette cell-group (outer), vesiculose cell-groups (inner).

Sm-74644

LACTARIUS LIGNYOTUS var. CANADENSIS

Mossy bank, Montmorency County, Michigan, July 24, 1967

Notes by Smith

Taste mild. Gills marginate, subdistant. Spores yellowish.

Notes by Hesler

Spores 8.5-11(12) x 8.5-10.5(11) μ , warts 1.0-2.0 μ high, rather heavy, bands more or less nodulose and with branches, forming a partial reticulum, isolated warts and nodules often connected to bands by lines. Pleurocystidia none; pseudocystidia filamentous, on sides 3-5 μ broad, on edges 2-3 μ broad; cheilocystidia 38-52 x 5-7 μ , more or less cylindric. Pileus and stipe cuticles as described in Brittonia 14:398.

Sm-78649

LACTARIUS LIGNYOTUS var. CANADENSIS

Canyon Lake Swamp, Marquette Co., Michigan, August 28, 1970

Notes by Smith

Cap velvety blackish. Gills pallid, edges dark, subdistant, staining reddish. Stipe velvety blackish.

Notes by Hesler

Spores 10-11.5 x 9.5-11 μ , globose or subglobose, warts 1.0-2.3 μ , bands wide-spaced, forming a partial to no reticulum. Basidia 50-63(76) x 9-12(14) μ , 2-4-spored. Pleurocystidia 58-63 x 7-9 μ , clavate-apiculate, very rare; cheilocystidia 37-48 x 5-6 μ , more or less cylindric, numerous. Pileus and stipe cuticle as described (Brittonia 14:398).

Sm-78973

LACTARIUS LIGNYOTUS var. ~~PARVULUS~~

canadensis

Tillamook Co., Oregon, October 12, 1970

Notes by Smith

Pileus sepia-blackish, wrinkled, glabrous, dry. Taste mild.

Gills faintly margined, close to subdistant, whitish then creamy tan and brown.

Stipe paler than cap, white below, slowly reddish where cut.

Notes by Hesler

Spores 9-11 x 9-10 μ , globose or subglobose, warts 0.8-2.0 μ , bands wide-spaced forming a partial or no reticulum. Pleurocystidia none; cheilocystidia more or less cylindric, 25-38 x 4-7(8) μ . Pileus cuticle a zone of inflated hyphal cells, often in a chain of 2-3, the terminal pileocystidia brownish, 35-63 x 5-10 μ , cylindric, clavate (a turf). Stipe of interwoven hyphae, bearing a turf of pale brownish caulocystidia, 20-62 x (3)4-7 μ , cylindric, subclavate, or capitate; rosettes present.

Sm-79118

LACTARIUS LIGNYOTUS var. ^{*canadensis*} ~~PARVULUS~~

Under spruce-hemlock, Cascade Head, Tillamook Co., Oregon, October 17, 1970

Notes by Smith

Cap rugose-wrinkled; gills marginate; taste mild.

Notes by Hesler

Micro characters as in Sm-78973.

Lignytus

Shaffer - 3466 LACTARIUS LIGNYTUS var. ~~HIRTILLUS Sm. & Hes. forma~~
(Form with brown-margined gills)

On moss covered logs, in spruce swamp, Windham Co., Vt.,
leg. R. L. Shaffer, det. A. H. Smith, August 28, 1961

Notes by Hesler

Spores 9-11.5 x 8-11 μ , globose or subglobose, warts 1.0 - 2.0 μ , bands wide-spaced forming a partial or complete reticulum. Basidia 48-55 x 10-12 μ , (2)4-spored. Pleurocystidia none (except cheilocystidia extend a short distance up to sides); cheilocystidia 33-42 x 4-6 μ , cylindric to subventricose. Pileus cuticle of variable, large cells, the terminal elements as pileocystidia, 52-98 x 5-10 μ , some septate, brownish, in a turf. Stipe cuticle of interwoven hyphae bearing a turf of caulocystidia, more or less cylindric, pale brown to nearly colorless, 38-132 x 4-7 μ , more or less cylindric; rosettes present.

This agrees with the non-margined-gilled variety in micro structure.

27307

LACTARIUS LIGNYOTUS Fr. var. ^{NATYELLUS}
lignytus

On fromose duff, Whitney, Ontario, Petersen, August 7, 1962.

Spores 8.5-12 x 8.5-11 μ , globose or subglobose, warts 0.8-2.0 μ high, with broad and narrow bands forming a limited reticulum (similar to var. hirtellus). Basidia 60-86 x 11-13 μ , 4-spored. Pleurocystidia 42-68 x 5-8 μ , cylindric, often septate toward the base, similar to cheilocystidia; pseudocystidia as in var. hirtellus; cheilocystidia 38-57 x 5-7 μ , cylindric, septate at base. Pileus cuticle similar to hirtellus, pileocystidia clavate; cylindric, or subfusoid, 25-57 x 5-12 μ , arising from cells, forming a turf. Stipe cuticle similar to hirtellus, caulocystidia 25-80 x 5-10 μ , cylindric, clavate, often septate below, arising from hyphae. Clamp connections none.

Sm-63813

Lignytus
LACTARIUS LIGNYOTUS var. ~~HERITELLUS~~

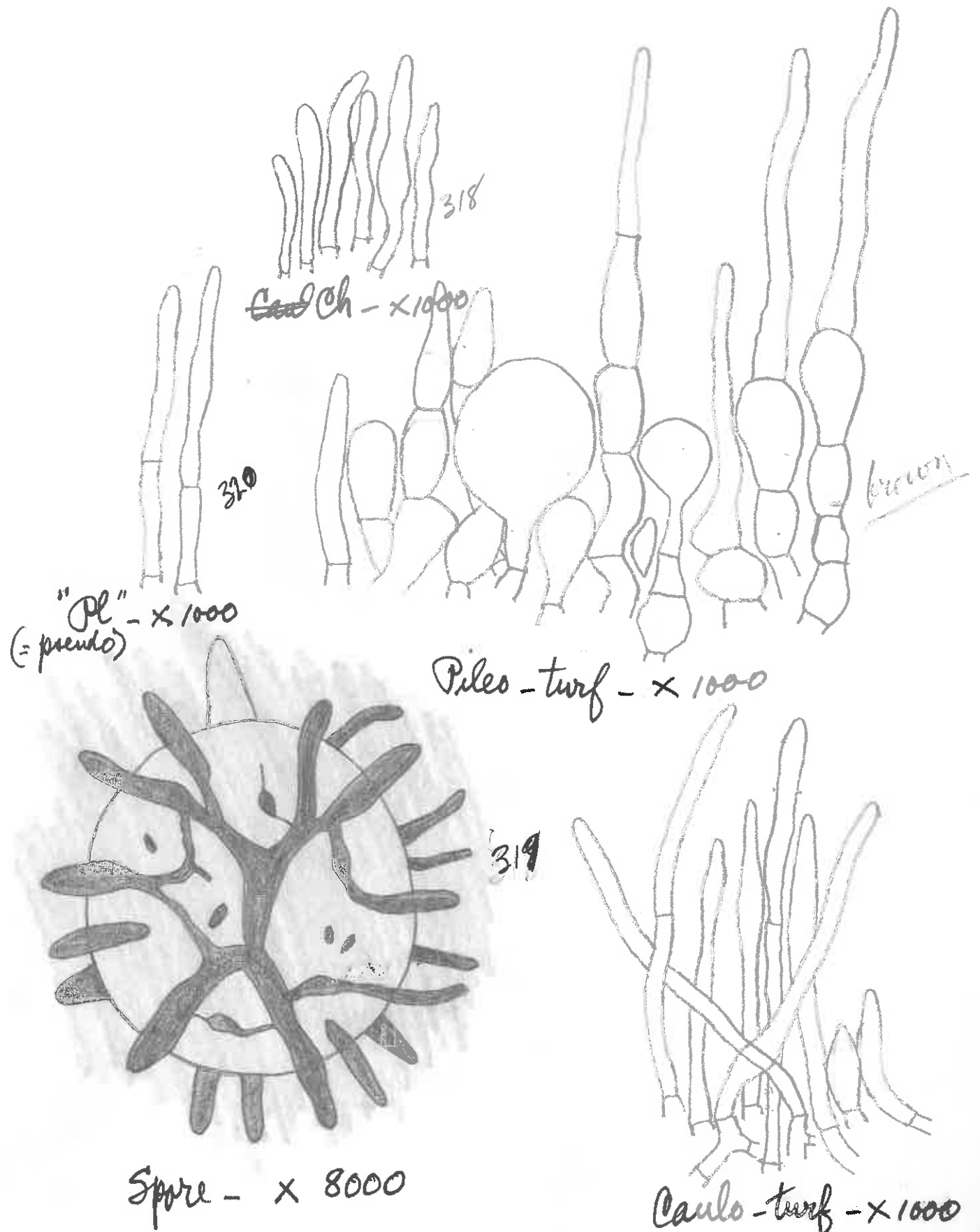
Tahquamenon Swamp, Michigan, August 2, 1961

Holotype (of *L. lignytus* v. *heritellus*)

Spores 9-11.5 x 8-11 μ , subglobose, globose, or broadly ellipsoid, warts 1.0-2.0 μ high, rods or broadly blunt, on a given spore: all of one kind or mixed, and with one or other predominant, or more or less equally mixed, bands and lines forming a partial or more rarely a complete reticulum. Basidia 50-57 x 10-12 μ , 4-spored. Pleurocystidia none, except cheilocystidia extend up sides, cylindric, often septate, 53-60 x 3-5 μ ; pseudocystidia filamentous; cheilocystidia 23-40 x 3-5 μ , cylindric, clavate, ventricose. Gill trama of undulating subparallel hyphae. Pileus trama vesiculose. Pileus cuticle a brownish, more or less palisade of vesiculose to subpyriform cells, some bearing terminal elements ^{as} pileocystidia (in a turf), 30-~~65~~^{65 (110)} μ , 4-7 μ , the subcuticular zone irregularly cellular. Stipe cuticle an interwoven, colorless zone bearing a turf of caulocystidia, 25-~~50~~⁷⁵ x 4-7 μ , cylindric to slightly ventricose; rosettes present. Clamps none.

Sactarius lignyotus var. *Rivstellus*
lignyotus

Sm - 63813 - ~~Holotype~~



Sm-1386

Lignyotus
LACTARIUS LIGNYOTUS var. ~~HERBILIUS~~

Conway Lake, Marquette Co., Michigan, N. J. Smith, August 8, 1968.

Notes by N. J. Smith

Pileus convex to depressed, dry, velvety, slightly wrinkled in age, dark-brown (near 6-F-8 to 6-E-5) near the margin. Context odor and taste fungoid. Latex white, copious, unchanging or pinkish in age, mild.

Lamellae adnate with a decurrent tooth, subdistant, creamy, edges concolorous.

Stipe white basally darkening to brown, velvety.

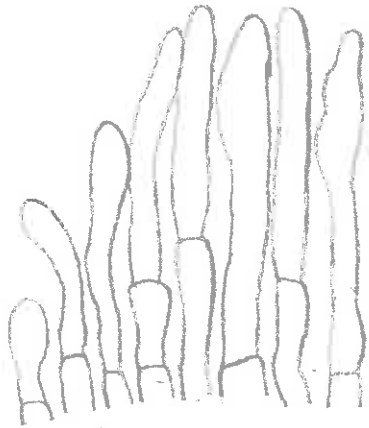
Spore deposit: light buff.

Notes by Hesler

Spores 7.5-10.5(11) x 7.5-9.5 μ , globose or subglobose, warts 0.8-1.6 (2.0) μ , bands forming a partial reticulum. Basidia 50-56 x 9-12 μ , 4-spored. Pleurocystidia none, except as cheilocystidia extending up the sides, 100-250 μ ; cheilocystidia 20-50 x 4-7 μ , more or less cylindric, often septate, abundant. Gill trama of short-celled, interwoven hyphae; rosettes occasional in upper portion of the gill. Pileus trama vesiculose; rosettes in lower portion. Pileus cuticle a red-brown trichodermium, a chain of 2-3 more or less inflated cells, the pileocystidia variable in shape (filamentous, vesiculose, ventricose, clavate, flask-shaped). Stipe cuticle a zone of repent, narrow, colorless hyphae bearing a turf of brown caulocystidia, 15-80 x 4-7 μ ; rosettes numerous. Clamp connections none.

Lactarius lignyotus var. *hirsellus* *Lignyotus*

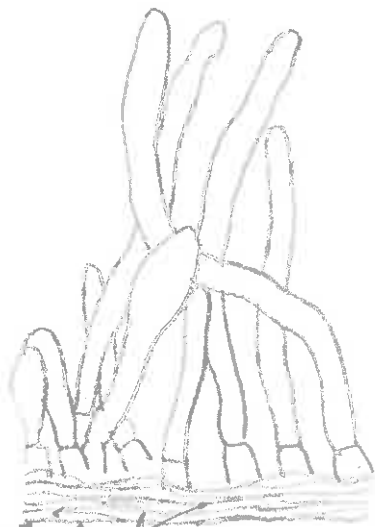
N.J. Sm. - 1386



Ch - x 1000



Pileus trichodermial turf -
x 1000



Stipe turf - x 1000

Bigelow 13109 LACTARIUS LIGNYOTUS var. ~~HIRTILLUS~~ *Lignyotus*

Under hardwoods and conifers, near Mt. Mansfield,
Lamville Co., Vermont, July 27, 1964.

Notes by Bigelow

Pileus "bister." Lamellae subdistant, not marginate, white then ochraceous. Latex staining pink, slightly acrid.

Notes by Hesler

Despite taste, the micro structure indicates the above name.

Spores 9-11 x 8.5-10 μ , globose, subglobose, warts 1.0-1.7 μ . Pleurocystidia none, except as cheilocystidia which extend up sides 100 μ and less; cheilocystidia 36-58 x 4-6 μ , cylindric, or subclavate to subventricose. Pileus cuticle of brown cells bearing a turf of pileocystidia 28-80 x 5-18 μ , more or less constricted and septate, cylindric to ventricose, on enlarged cells. Stipe cuticle of interwoven hyphae bearing a turf of long brown caulocystidia, 45-130 x 6-8 μ .

Lignyotus

Bigelow - 13199 LACTARIUS LIGNYOTUS var. ~~HIRIBELLUS~~ Sm. ~~and Hes.~~
Stowe, Vt., in hemlock-hardwood swampy woods, July 31, 1964.

Notes by Bigelow

Pileus nearest "Saccardo's umber." Context pink from latex. Lamellae "maize yellow," close to subdistant. Stipe "drab." Spore Deposit: "warm buff."

Notes by Hesler

Spores (8.5) 9-11 x 8.5-11 μ , globose to subglobose, warts 1.0-2.0 μ high, often slender and sometimes crooked, bands and lines forming a partial reticulum (at times complete, more rarely none). Basidia 56-65 x 10-12 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, rare; cheilocystidia 30-52 x 4-6 μ , cylindric, occasionally septate. Pileus cuticle a trichodermium, the pileocystidia 42-105 x 6-12 (16) μ , variously shaped (ventricose, flask, bottle, subcylindric, spathulate and at times with a mucro). Stipe cuticle 28-90 x 5-7 μ , filamentous-cylindric, at times clavate, apices rarely forked; rosettes present. Clamps none.

Bigelow - 13252

LACTARIUS LIGNYOTUS var. ~~HIRTELLUS~~ *lignyotus*

solitary, under conifers, Stowe, Vt., Aug. 3, 1964.

Notes by Bigelow

Pileus dark brown. Flesh sordid pink from latex; taste mild. Gills ochraceous buff, subdistant. Stipe "bister." Spores ochraceous.

Notes by Hesler

Spores 9-11 x 8.5-10 μ , globose or subglobose, warts 0.7-1.6 μ high, bands and lines forming a partial or at times a complete reticulum. Pleurocystidia as cheilocystidia extending up sides; pseudocystidia filamentous; cheilocystidia 24-48 x 4-5 μ , cylindric. Pileus cuticle of large cells bearing a turf of pileocystidia--25-98 x 5-8 μ . Stipe cuticle a turf of caulocystidia, 24-98 x 5-7 μ , cylindric, brown; rosettes present.

Bigelow - 13553 LACTARIUS LIGNYOTUS var. ~~HIRTILLUS~~ *lignyotus*

Stowe, Vermont, August 19, 1964

Notes by Bigelow

Pileus umbrinous, dry, rugose, umbilicate. Latex staining pink.
Lamellae subdistant.

Spores ochraceous.

Notes by Hesler

Spores 8.5-11.5 x 8.5-10 μ , subglobose (more rarely globose) or ellipsoid, warts 0.8-2.0 μ high, bands wide, few and forming no reticulum or rarely nearly complete. Pleurocystidia none; cheilocystidia (28) 37-60 x 6-8(10) μ , filamentous, clavate, or subventricose. Pileus cuticle of irregular, rather large cells bearing a turf of pileocystidia, 28-60 x 6-17 μ , cylindric to pyriform. Stipe cuticle a turf (arising from interwoven hyphae) of caulocystidia, 26-80 x 6-8(10) μ , cylindric, ellipsoid, subclavate.

13958

Lignyotus
LACTARIUS LIGNYOTUS var. ~~HERTELIIUS Sm. & Hes.~~

Indian Creek, August 24, 1941.

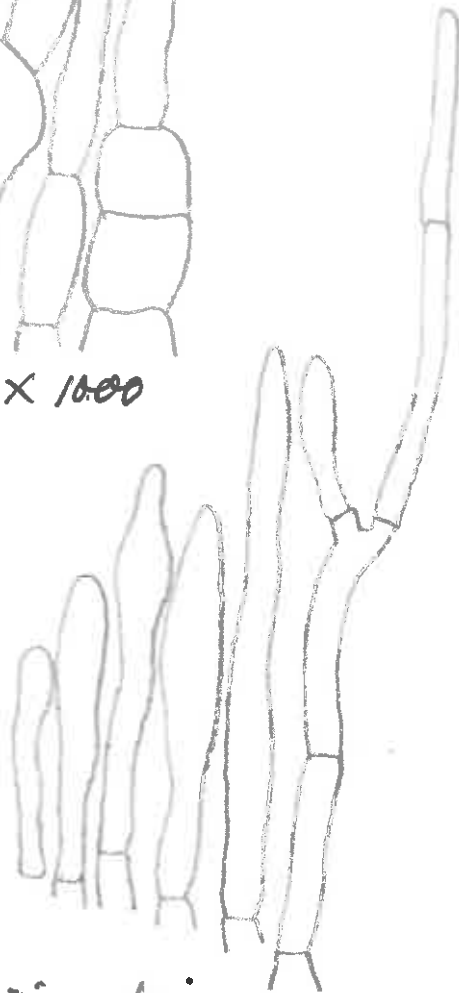
Spores 9-11 x 8-10 μ , globose or subglobose, warts 1-2.3 μ high, at times crooked or bent, broad and a few narrow bands forming a limited reticulum. Basidia 47-54 x 10-12 μ , 4-spored. Pleurocystidia 46-65 x 3-7 μ , clavate to cylindric, rarely capitate, without obvious contents, found ^{only} near edges; pseudocystidia 55-93 x 4-7 μ , crooked, projecting, with a refractive-granular content, numerous; cheilocystidia 25-48 x 4-6 μ , cylindric to subclavate, similar to pleurocystidia, often septate below. Gill trama of undulating, subparallel hyphae, with large lactifers. Pileus trama vesiculose. Pileus cuticle a trichodermial turf, hyphae giving rise to a chain of cells, the terminal element of which is pileocystidioid, ventricose, cylindric, 18-50 x 5-10 μ . Stipe cuticle also a trichodermial turf, arising from hyphae, the terminal elements as caulocystidia, 30-127 x 3-8 μ , often septate, at times branched. Clamp connections none.

Lactarius lignyotus var. ~~*littellus* Am. + Hes. - con.~~
13958 *lignyotus*

[more, on
another sheet]

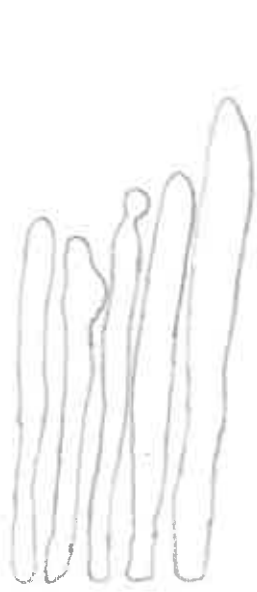


Pileus trichoderm. - $\times 1000$

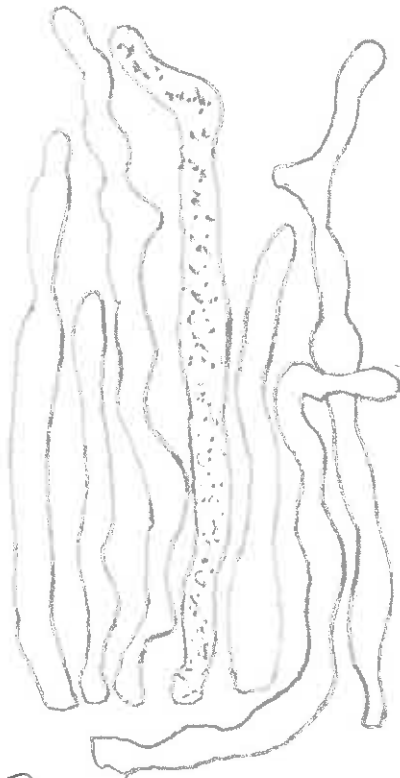


Stipe trichoderm.
 $\times 1000$

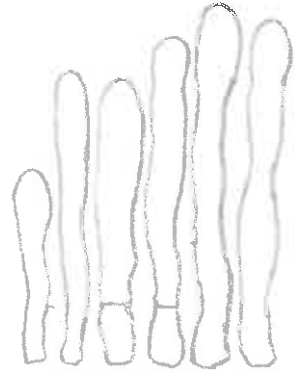
Saccarius lignyotus var. ~~*rudellus*~~ Em. & Hes.
13958 *lignyotus*



Pl - x 1000
(near edge only)

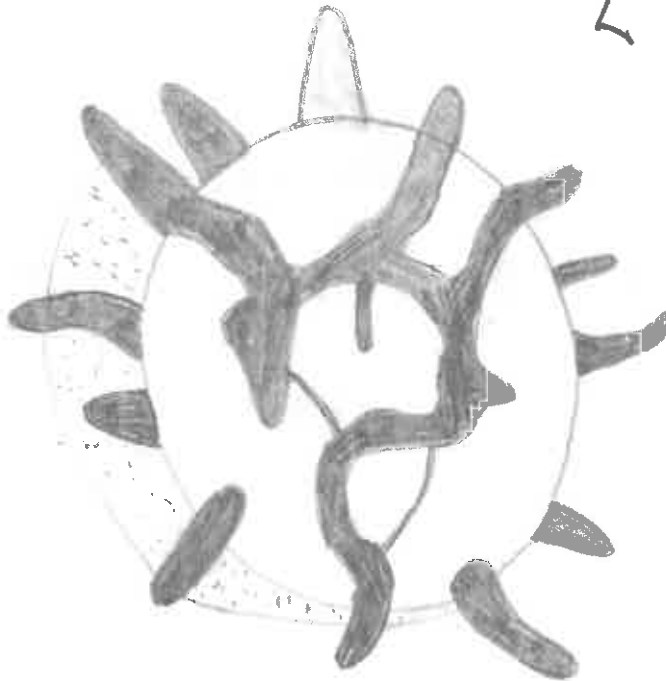


Pseudo - x 1000



Ch - x 1000

[more, another sheet]



Spore - x 8000

Lignytus

Bigelow - 14560 LACTARIUS LIGNYTUS var. ~~HERPELLUS~~

Under conifers, Conway, Massachusetts, September 7, 1965

Notes by Bigelow

Pileus umber, rugulose, umbonate when young, depressed to umbilicate in age. Latex drying and staining pink. Gills close to subdistant, cream color at first, then dingy pale ochraceous buff.

Spore deposit: light ochraceous buff.

Notes by Hesler

Spores 8.5-10 x 8.5-10 μ , globose or subglobose, warts 1.0-2.5 μ high, bands often catenulate, with fine lines present, forming a partial or no reticulum. Basidia 47-53 x 10-12 μ , (2)4-spored. Pleurocystidia as cheilocystidia extending up; pseudocystidia filamentous, apices often crook, cork-screw, or forked; cheilocystidia 32-53 x 4-6 μ , filamentous-cylindric, those on sides often septate. Pileus cuticle a turf of brown, cylindric to ventricose pileocystidia 38-94 x 5-8 μ , arising from brown enlarged cells. Stipe cuticle a turf of brown, cylindric or clavate caulocystidia, 25-68 x 4-6 μ ; rosettes present.

Sm-72043

Lignytus
LACTARIUS LIGNYTUS var. ~~HIRTILLUS~~

Sugar Island, Michigan, August 10, 1965

Notes by Smith (supplemented)

Cap 4-9 cm, rugose-reticulate, bistre to snuff-brown, margin plicate. Context thin, taste mild. Latex staining vinaceous red (after cut flesh stands overnight) mild. Lamellae subdistant, edges concolor. Stipe bistre to sooty-brown, 4-6 cm x 6-15 mm (compressed).

Spores ochraceous in deposit.

Notes by Hesler

Micro characters as in Brittonia 14:396 (type). Spores 7.5-10 x 7-9.5 μ , globose or subglobose, warts slender or stout, 0.8-1.7 μ high bands and branches forming a partial (at times more or less complete) reticulum, webbing more or less evident.

Sm-72046

LACTARIUS LIGNYOTUS var. ~~HIRTILLUS~~

lignyotus

Sugar Island, Michigan, August 10, 1965

Notes by Smith

Pileus 5 cm, snuff brown, margin faintly plicate. Latex milk-white, staining reddish, mild. Gills distant, ochraceous, edges concolorous. Stipe 4 cm long, 4(5?) mm thick, snuff brown.

Spores ochraceous.

Notes by Hesler

Spores 8-11 x 8-10.5 μ , globose or subglobose, warts 1-2 μ high, bands more or less catenulate forming a partial reticulum. Basidia 53-60 x 10-12 μ , 4-spored. Pleurocystidia none found; pseudocystidia filamentous, 3-5 μ broad; cheilocystidia 38-52 x 4-6 μ cylindric, some septate. Pileus and stipe cuticles as in Type.

Sm-72451

LACTARIUS LIGNYOTUS var. ~~HERTILUS~~ *lignyotus*

Michigan, August 27, 1965.

Notes by Smith

Taste mild. Latex milk-like, staining reddish. Gills ~~sl~~ distant, edges whitish.

Notes by Hesler

Spores 9-12 x 8-11 μ , globose or subglobose, warts 1.2-2.5 μ long, lines and catenulate bands forming a reticulum (complete or partial) or not. Pleurocystidia none; pseudocystidia present; cheilocystidia 34-57 x 4-5 μ , cylindric. Pileus cuticle a turf of pileocystidia; stipe cuticle a turf of cylindric, at times constricted, sometimes flask-shaped caulocystidia 32-120 x 5-8 μ .

Sm-75011

Lignytus
LACTARIUS LIGNYOTUS var. ~~HIRTUILLUS~~

Tahquamenon, Michigan, August 14, 1967

Notes by Smith

Pileus yellow brown, wrinkled. Taste mild. Gills ~~dist~~ distant, not marginate. Color change very slow.

Spores ochraceous.

Notes by Hesler

Spores $8.5-11 \times 7.5-9 \mu$, ellipsoid to subglobose, warts $0.5-1.5 \mu$, shorter ones stout, longer ones slender, bands more or less nodulose, forming a partial reticulum. Pleurocystidia none; cheilocystidia cylindric, $32-48 \times 3-5 \mu$. Otherwise as described in Brittonia 14:396).

Lignyotus

Sm-78618 LACTARIUS LIGNYOTUS var. ~~HERTELLUS~~

Ives Lake, Marquette Co., Michigan, August 27, 1970

Notes by Smith

Cap bister, rugulose, glabrous. Latex white, stains gills vinaceous buff; taste mild.

Gills subdecurrent, distant, ochraceous, margins concolor.

Stipe concolor with cap, nearly naked.

Notes by Hesler

Spores 9-12 x 9-11 μ , globose to subglobose, warts 1-2 μ high, bands wide-spaced, forming a partial reticulum. Basidia 48-55 x 10-12 μ , (2)4-spored. Pleurocystidia none; cheilocystidia 33-50 x 4-6 μ , cylindric or subclavate, extending up the sides some 260 μ . Pileus cuticle a zone, 2-3 cells deep, cells brown, globose or pyriform, pileocystidia brownish, 48-60 x 6-9 μ , arising from and between the cells. Stipe cuticle interwoven, bearing a turf of caulocystidia, 34-102 x 4-7 μ , cylindric, walls more or less flexuous/rosettes present.

Sm-79154

LACTARIUS LIGNYOTUS var. ~~HIRTILLUS~~ *Lignyotus*

C-PHOTO

Scattered under spruce-hemlock, Cascade Head Exp. Forest, Tillamook Co.,

Oregon, October 19, 1970

Notes by Smith

Pileus 2.5-5 cm convex-umbonate to convex-depressed surface velvety at first but soon more or less glabrous to merely impolished, "mummy brown" to blackish, occasionally with paler areas of dull ochraceous. Context with thin, mild to faintly peppery. FeSO_4 - 0.

Lamellae more or less subdistant, decurrent and stipe narrow to moderately broad, white becoming pinkish buff and spotted cinnabar where latex dried on them, edges even and concolor.

Stipe 3-8 cm long, 4-8 mm thick, equal, hollow, white at base, smoky brownish to bister or nearly as dark as cap upward.

Spore deposit ochraceous.

Notes by Hesler

Spores 9-11.5 x 9-10.5 μ , globose or subglobose; warts 0.7-2.0 μ , bands wide-spaced, few lines, forming a partial or no reticulum. Pleurocystidia none; pseudocystidia filamentous, 2.5-4 μ broad; cheilocystidia 26-38 x 5-9 μ , clavate to subventricose. Pileus cuticle of cells, usually in chains, terminal elements as a turf of brownish pileocystidia, 36-84 x 5-9 μ , cylindric, ventricose. Stipe cuticle a colorless zone of tightly interwoven hyphae, bearing a turf of pale brown caulocystidia, 38-90 x 4-7(8) μ , cylindric to subventricose; rosettes present.

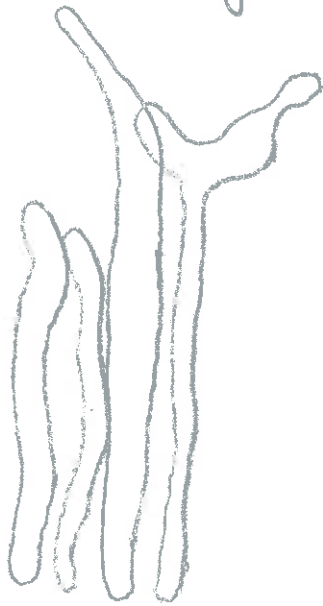
LACTARIUS LIGNYOTUS var. LIGNYOTUS

Under oak-chestnut, Pink Beds, N. C., Burlingham, No. 20-
1907, July 25, 1907.

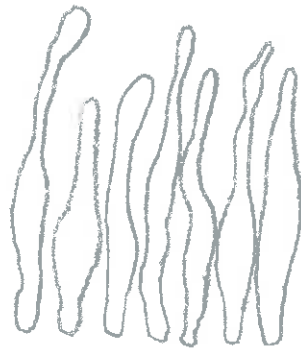
Spores 10-10.5 x 9-10.5 μ , warts 1.0-1.5 μ high, bands forming a reticulum. Basidia 46-53 x 10-11 μ , 4-spored. Pleurocystidia none.; pseudocystidia ~~filamentous~~ ^{broad,} 4-6 μ , filamentous, scattered, refractive, apices blunt or tapering, more rarely forked, at times projecting; cheilocystidia 32-44 x 3-6 μ , filamentous to flask-shaped, or fusoid, apices tapering (usually slender). Gill trama interwoven, no sphaerocysts. Cuticle a cellular zone bearing a turf of pileocystidia, 20-38 x 3-5 μ , brownish, clavate or filamentous. Caulocystidia 25-64 x 4-12 μ , brownish, somewhat variable: cylindric, fusoid, flask-shaped, as a turf.

Factarius lignytus var. *lignytus*

Burlingham - 20, 1907, Pink Beds, July 25, 1907



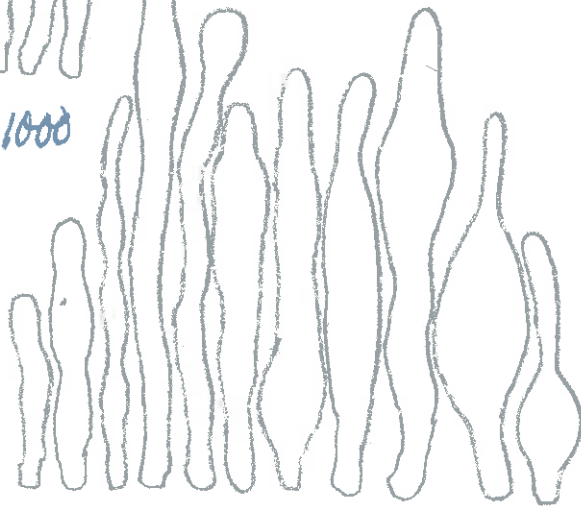
Pseudo - x 1000



Ch - x 1000



Pileo - x 1000



Caul - x 1000

N. J. Smith - 1851

Lignyotus
LACTARIUS ~~PICINUS var. AMERICANUS~~

On rotten pine log, Ives Lake, Huron Mts., Michigan, September 1, 1968

Notes by N. J. Smith

Pileus snuff brown to bister, wrinkled. Context staining reddish brown. Taste mild or slowly peppery. Lamellae decurrent, medium broad, subdistant, dull straw color edges. Stipe 5-9 mm broad, concolor, whitish below, solid.

Spores pinkish buff.

Notes by Hesler

Spores 8.5-11 x 8.5-10 μ , globose \neq or subglobose, warts 1-2.3 μ , bands more or less catenulate, with some lines, forming a partial or no reticulum. Pleurocystidia none; pseudocystidia filamentous; cheilocystidia cylindric. Pileus cuticle of brown more or less isodiametric cells bearing a turf of brown pileocystidia, 28-64 x 4-6 μ . Stipe cuticle a turf of caulocystidia, 45-90 x 5-8 μ , cylindric or subventricose.

Bertelli - 2257

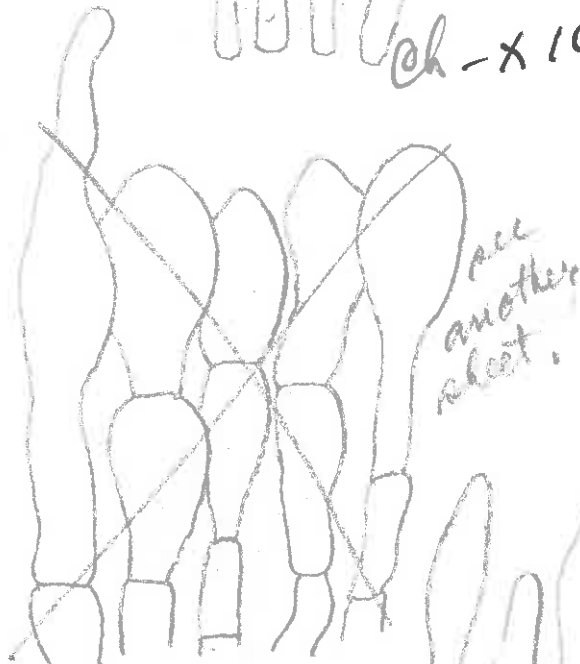
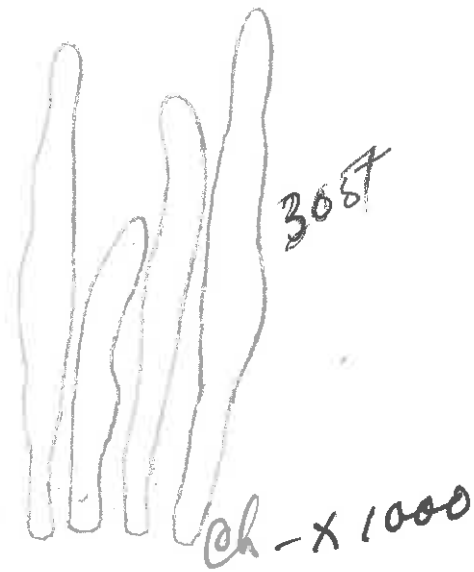
LACTARIUS LIGNYOTUS var. LIGNYOTUS

Harlow Creek, Michigan, August 25, 1964

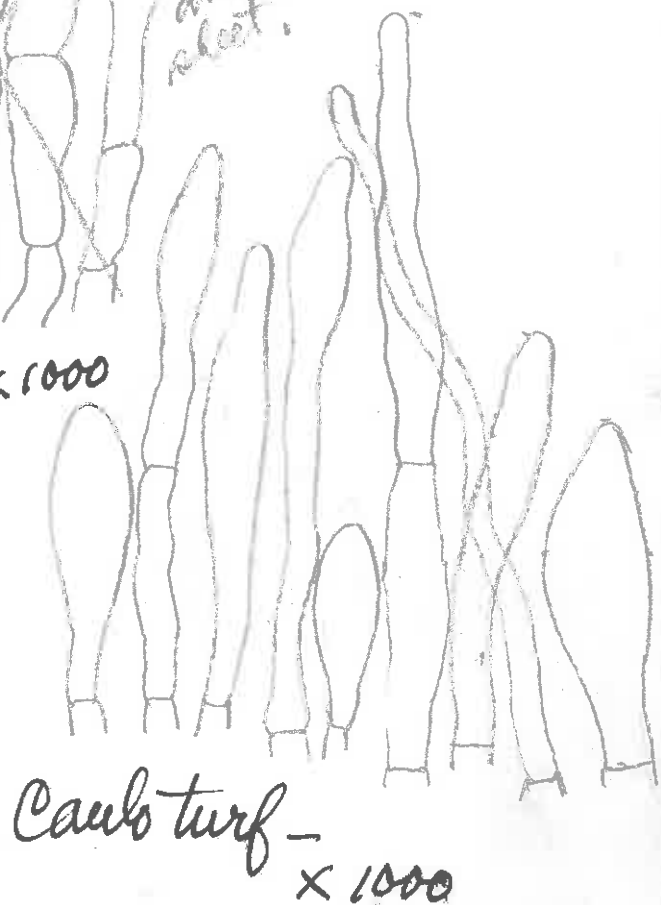
Spores $8.5-11 \times 8-11 \mu$, globose to subglobose, $53-60 \times 10-13 \mu$, 2-4-spored. Pleurocystidia none; pseudocystidia more or less filamentous, apices often more or less enlarged, often projecting $15-25 \mu$; cheilocystidia $42-70 \times 5-8 \mu$, cylindric or subventricose. Gill trama of narrow, subparallel hyphae, with numerous lactifers bearing brownish contents. Pileus trama vesiculose. Pileus cuticle of vesiculose, brown, epithelial cells, $10-25 \mu$ in diameter, most proliferating to form a neck, $20-70 \times 4-8 \mu$, the pileocystidia forming a turf.

Lactarius lignyotus var. *lignyotus*

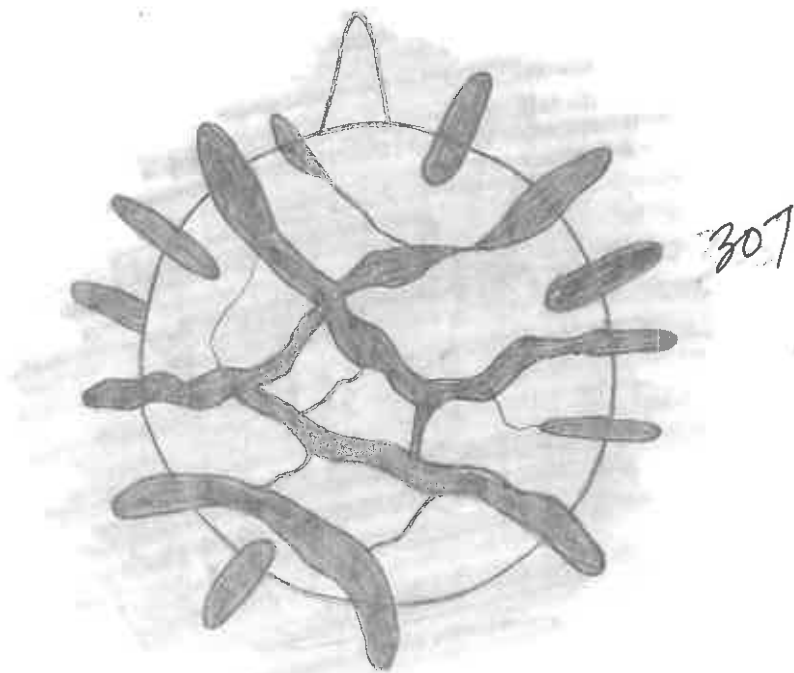
Bartelli - 2257



[Spore-drawing,
next sheet]

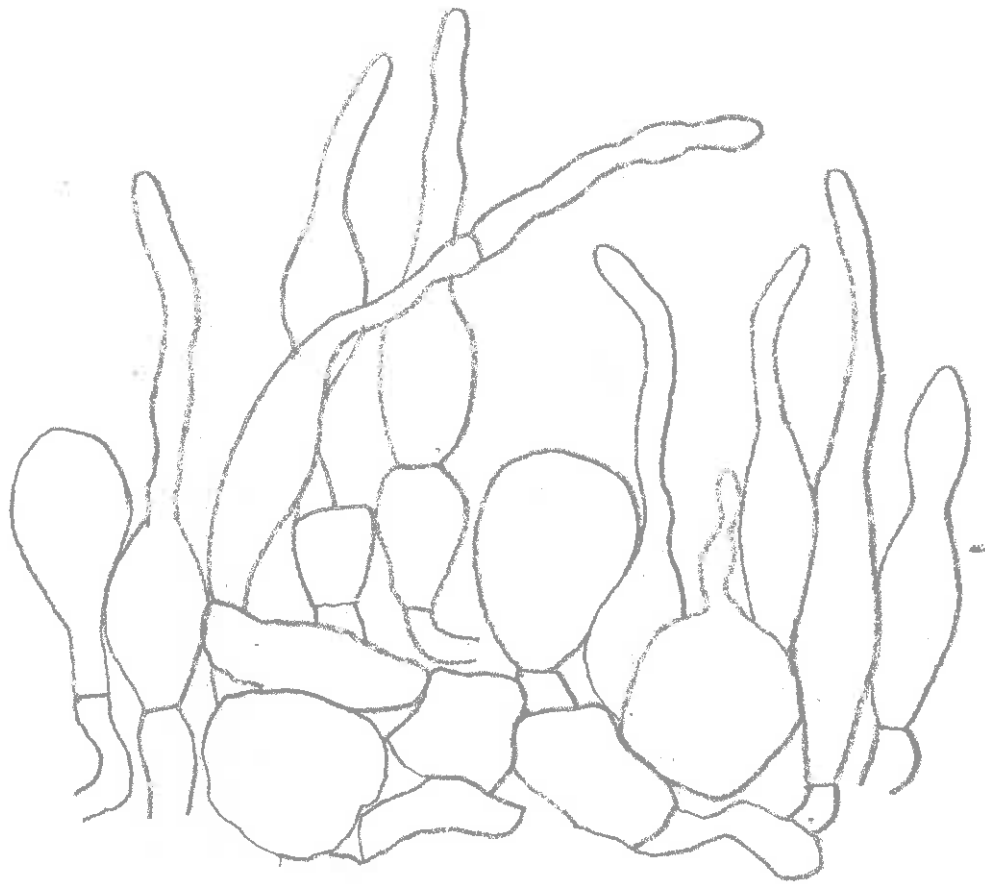


Sactarius lignyotus var. *lignyotus*
Bartelli - 2257



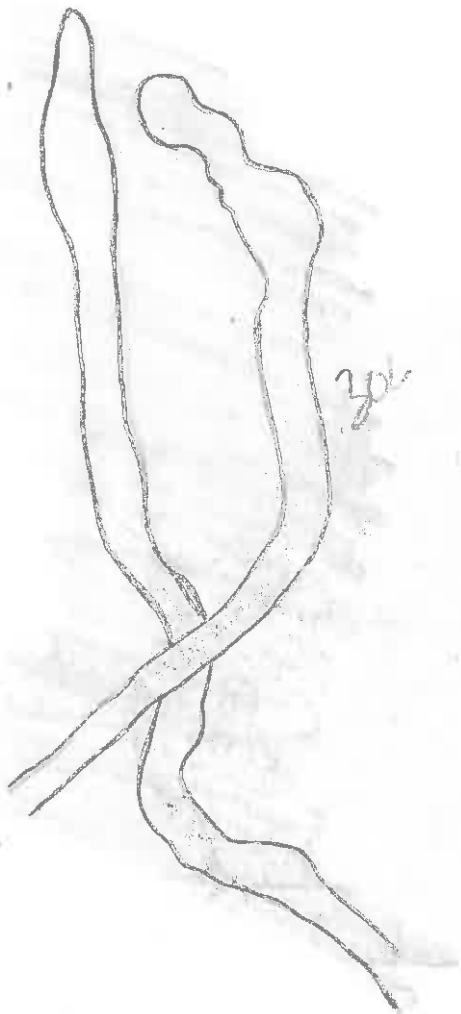
Spore - x 8000

Pactarius lignyotus var. *lignyotus*
Bartelli - 2257

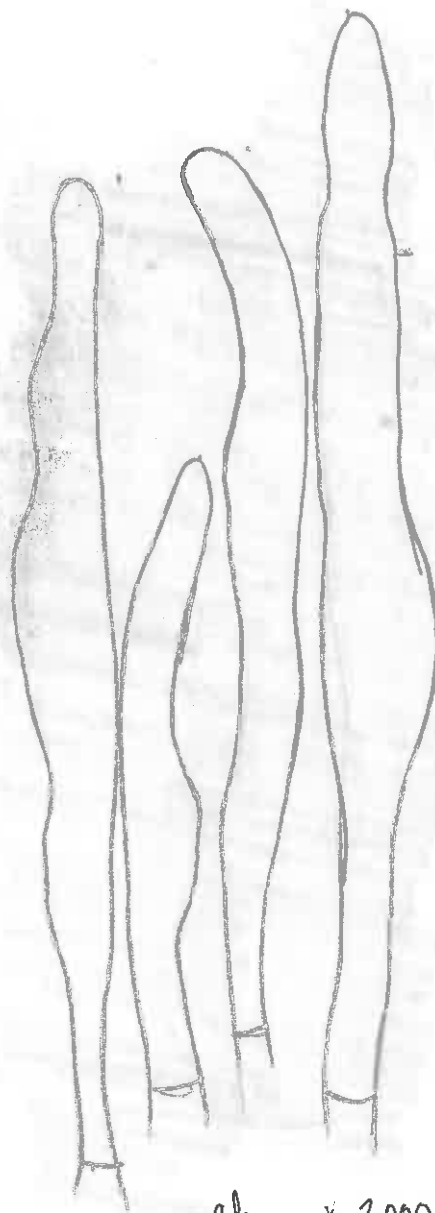


Pileus cuticle x 1000

Lactarius lignyotus var *lignyotus*
Bartelli - 2257



Pseudo - x 2000



Ch - x 2000

Ammirati - 3653

LACTARIUS LIGNYOTUS var.

Gregarious in mixed woods, Baraga Co., Michigan, August 12, 1969

Notes by Ammirati

Cap dry, short, sharp umbonate, ~~velvety~~ velvety, rugulose on center, "bister." Odor none, taste mild. Latex sparse, watery, unchanging or at length brownish.

Lamellae decurrent, distant, thick, dark cream buff to pale orange ochraceous buff, intevenose (no notes on margin).

Stipe dull gray brown to dark brown, velvety, base whitish.

Notes by Hesler

Spores 9-11 x 8-10.5 μ , subglobose or globose, warts 1.0-2.4 μ high, bands forming a partial reticulum. Pleurocystidia none; cheilocystidia cylindric. Pileus and stipe cuticle as in Brittonia 14:419.

Staining? Color-change of latex not clear.

It might be near var. canadensis.

Ammirati - 3655 LACTARIUS LIGNYOTUS var.

Baraga Co., Michigan, in mossy area, mixed woods, August 12,
1969 (Same as ~~3653~~ / 3653).

Notes by Hesler

Micro characters as in Ammirati - 3653.

Near var. canadensis.

Ammirati - 3657 LACTARIUS LIGNYOTUS var.

Baraga Co., Michigan, August 12, 1969 (same as Ammirati - 3653)

Notes by Hesler

Micro characters as in Ammirati - 3653.

Ammirati - 4853 LACTARIUS LIGNYOTUS (American form)

Solitary/scattered under hemlock-hardwood, Marquette Co., Michigan,

August 7, 1970

Notes by Ammirati

Cap deep "bister" or "fuscous" mixed with bister to deep "mummy brown," short striate-ridged. Latex watery-white, staining "fawn color."

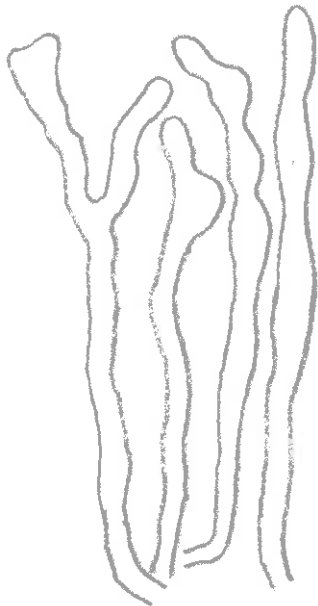
Lamellae subdistant, whitish to "cream color," or tinted "light ochraceous buff" in age.

Stipe light fuscous brown or smoky brown (paler than cap).

Notes by Hesler

Spores 8-11 x 8-10.5 μ , warts 0.8-2.0 μ , bands and lines forming a partial reticulum. Basidia 58-74 x 9-11 μ , 4-spored. Pleurocystidia none; pseudocystidia 3-6 μ broad, conspicuous gnarled, constricted, or forked; cheilocystidia 32-46 x 3-6 μ , cylindric or subventricose. Pileus and stipe cuticle as in Brittonia 14:393.

Lactarius lignyotus (American form)
Ammirati - 4853



Pseudo -
X 1000

Bigelow - 5616 LACTARIUS LIGNYOTUS Fr. var. LIGNYOTUS

Lake Munroe, Quebec, July 23, 1957

(Bigelow says: see card 5614)

Micro characters as in 5614.

Bigelow - 5617

LACTARIUS LIGNYOTUS VAR. LIGNYOTUS

Lake Munroe, Quebec, July 23, 1957

(Bigelow says: see card 5614)

Micro characters as in 5614.

Harrison - 8391

LACTARIUS LIGNYOTUS var. LIGNYOTUS

In moss, conifer woods, Willowdale, Nova Scotia, October 14, 1968

Notes by Harrison

Pileus 3-6 cm, campanulate-expanded to plane, with a small umbo, velvety, blackish-brown, margin wrinkled, crenate when young. Context white; odor none, taste mild.

Gills pale ochraceous, distant, thin, decurrent by lines.

Stipe 4-9 cm x 6-12 mm, concolor, velvety, base white-mycelioid, brown stains on old gills.

Notes by Hesler

Spores 8.5-11(12) x 8-11 μ , globose or subglobose, more rarely broadly ellipsoid, warts 0.8-1.7 μ , bands and branches forming a partial reticulum. Basidia 52-63 x 10-12 μ , 4-spored. Other micro characters as in Brittonia 14:393.

This identification assumes that the latex stains reddish, and gill edges concolor.

Bigelow 12247 LACTARIUS LIGNYOTUS var. lignyotus

Under conifers, WMNF, N.H., August 13, 1963.

Notes by Bigelow

Pileus plane, broadly depressed to slightly umbilicate, smoky brown, rugose, crenate. Latex white, drying and staining vinaceous-pink. Lamellae close or subdistant, broad, decurrent, ochraceous buff, edges not marginate. Stipe fuliginous.

Spores ochraceous buff.

NOTES BY HESLER

Spores 8.5-10.5 x 8-10 μ , subglobose to globose, or broadly ellipsoid, warts 0.7-1.5 (2) μ high, numerous, with bands and lines forming a partial reticulum. Basidia 50-62 x 10-13 μ , 4-spored. Pleurocystidia none; pseudo filamentous; cheilocystidia 35-54 x 5-7 μ , filamentous, subclavate, or subventricose. Pileus cuticle of large brown cells, bearing long (34-78 μ) or shorter (23-27 μ) brown, pileocystidia. Stipe cuticle more or less a turf of brown caulocystidia, 4-8 μ broad. Rosettes present.

Pileus and stipe slightly paler than usual.

Bigelow - 13200 LACTARIUS LIGNYOTUS Fr. var. LIGNYOTUS
Solitary in hemlock and hardwood swampy woods, Stowe, Vt.,
July 31, 1964.

Notes by Bigelow

Pileus fuliginous. Flesh pink from latex, acrid. Gills
"warm buff." Stipe fuliginous. Spores "honey yellow."

Notes by Hesler

Spores 8.5-10.5 (11) x 8-10 (10.5) μ , globose or sub-
globose, warts 1.0-2.0 μ high, bands and lines forming \pm a
reticulum (partial or complete). Basidia 44-56 x 10-12 μ ,
(2) 4-spored. Pleurocystidia none; pseudocystidia filamentous,
apices \pm cork-screw; cheilocystidia 32-60 x 5-6 μ , cylindric
to subclavate. Pileus cuticle a turf of pileocystidia, 33-92
x 6-30 μ , variable (cylindric, clavate, ventricose, spathulate,
pyriform), arising from enlarged hyphal cells. Stipe cuticle
a turf of caulocystidia, 22-94 x 5-15 μ , variable (ventricose,
cylindric, subfusoid, pyriform, clavate).

Maas G. - 13229

LACTARIUS LIGNYOTUS Fr. var. LIGNYOTUS

Tyrol, Austria, in meadow, edge of Picea woods, Alt. 1500 M., July 23, 1960

Notes by Maas G. (Transl. by Donk)

Cap with small, distinct umbo, strongly and irregularly rugulose, densely and short velutinous, dark brown, spotted ochre yellow at center and at the margin. Flesh white, taste mild or only slightly bitter. Latex white.

Gills broadly adnate, whitish with faint cream hue, simple or forked, lamellulae of 3 or 4 lengths, continuing in folds at top of stalk, often anastomosing, ~~sl~~ subdistant or nearly close, rather thick.

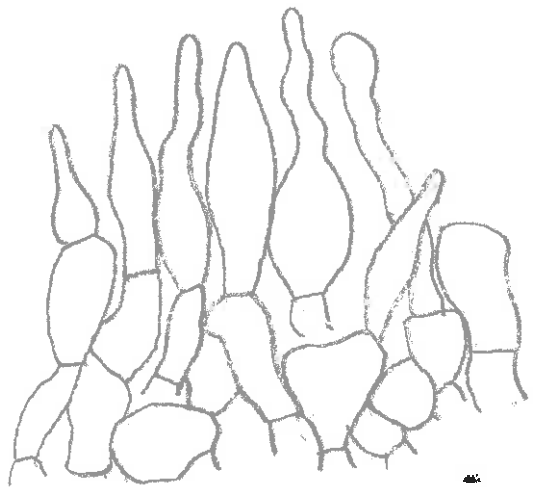
Stipe dark brown velutinous, base white-tomentose, with folds at top.

Notes by Hesler

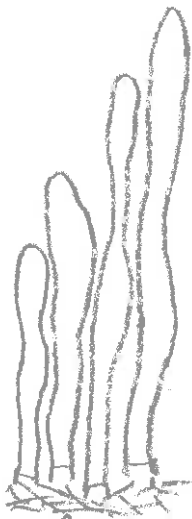
Spores 8-9.5(10) x 8-9 μ , globose to subglobose, warts 0.7-1.3 μ , bands wide-spaced, forming a partial reticulum. Basidia 53-64 x 11-12 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, abundant, 3-5 μ broad; cheilocystidia 40-62 x 4-6 μ , cylindric, some more or less crooked. Pileus cuticle an epithelium of brown, slightly inflated, somewhat barrel-shaped or irregular cells at times 2-3 in a row, 10-18 x 5-13 μ , the terminal elements nearly colorless, cylindric to subclavate pileocystidia, 18-45 x 5-12 μ , forming a turf. Stipe cuticle of interwoven hyphae, bearing a turf of pale brownish caulocystidia, 30-76 x 3-6 μ , cylindric or more rarely ventricose; rosettes present. Clamp connections none.

The cheilocystidia are more slender than given by Neuhoﬀ; otherwise similar. The brown caulocystidia suggest lignyotus.

Factarius lignyotus var. *lignyotus*
Maas G. 13229 (Austria)



Pileo - x 1000



Caulo

x 1000

25109

LACTARIUS LIGNYOTUS Fr. var. LIGNYOTUS

In spruce forest, Tamsjö, Sweden, leg.-det. M. Moser, July 15, 1961

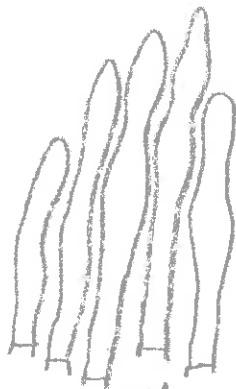
Notes by Hesler

Pileus and stipe dark-brown-blackish, velvety. Lamellae subdistant to nearly close.

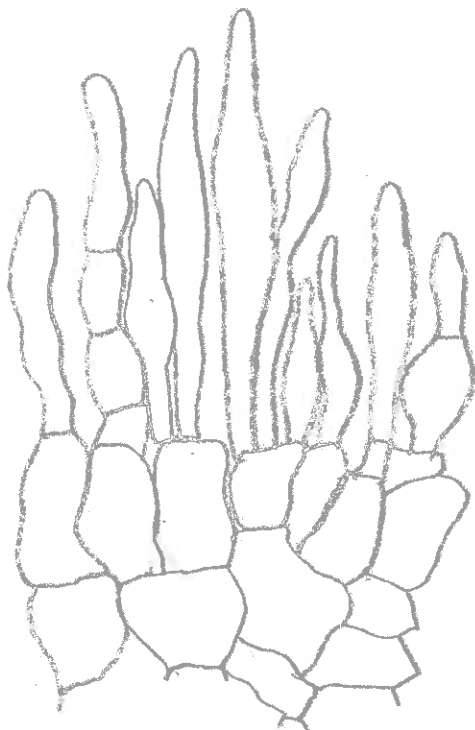
Spores 8-11.5 x 7.5-11 μ , globose or subglobose, warts 0.8-2.0 μ high, bands and lines forming a partial to nearly complete reticulum. Basidia 46-60 x 10-12 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, 3-5 μ wide; cheilocystidia 28-47 x 4-6 μ , cylindric or subventricose, often slightly constricted, brownish. Pileus cuticle a zone of brown cells, 3-4 ~~deep~~ deep, 10-25 x 6-18 μ , the surface bearing a turf of pileocystidia, 20-60 x 5-11 μ , cylindric, ventricose, or flask-shaped, few septate. Stipe cuticle a zone of interwoven hyphae bearing a turf of caulocystidia, 23-48 x 3-6 μ , similar to pileocystidia; rosettes present. Clamp connections none.

Actaricus ligyotus

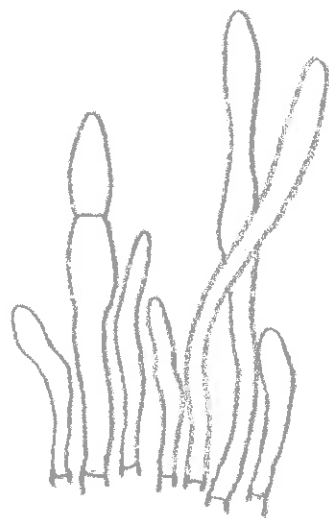
Teru. 25109 (leg. Morer, Femijö)



Ch. x 1000



Pileus cuticle
x 1000



Caule x 1000

Tenn - 35304

Bigelow - 5614 LACTARIUS LIGNYOTUS Fr. var. LIGNYOTUS (SEE PHOTO 5615)

On sphagnum, conifer forest, Munroe, Quebec, July 23, 1957

Notes by Bigelow

Pileus (1)2.5-7 cm, broadly campanulate when young with an inrolled and incurved margin, soon expanding to convex and finally plane, disc with small acute umbo, umbilicate at times, margin crenate, surface dry, velvety, often finely rugose about the disc, color black-fuliginous? when young (01-8°) becoming less black (1)S2-9°, 3-8°, 10°; flesh thin, whitish at first but soon pinkish tinted from latex, no odor, taste mild.

Lamellae decurrent and with longer decurrent ridge, close, broad (3-8 mm) whitish young (019-3°), becoming more yellow-orange (00Y19-12°), nearly subdistant, more or less equal, edges even, not marginate, often intervenose, occasionally forked and esp. at base), (color of stipe extends slightly onto gills).

Stipe 5-9 cm long, 4-7 mm thick, equal or the base slightly enlarged and tapering upward, base whitish-vinaceous mycelioid, terete, curved at base, solid, less velvety and paler than cap (08-8°).

Latex white, staining pink and turning pink (a light pink cinnamon).

Notes by Hesler

Spores (creamy yellow in spore print), 8.5-10.5(11) x 8-10.5(11) μ , globose or subglobose, warts 1.0-2.5 μ , coarse, 2 or 3 widely spaced bands, or at times more, forming a ~~part~~ partial reticulum. Pleurocystidia none; except cheilocystidia extend up gill-sides some 150-250 μ ; pseudocystidia filamentous, scattered; cheilocystidia 37-54 x 4-7 μ , cylindric or

Tenn - 35304

Bigelow - 5614

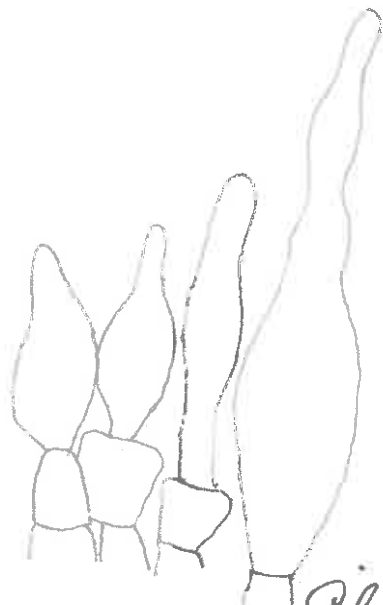
L. lignyotus Fr. var. *lignyotus* - 2

clavate, rather numerous, extending up sides 150-250 μ . Pileus cuticle a trichodermium, cells in lower portion inflated, 2-3 in a chain, lowest colorless, others brown, pileocystidia 27-76 x 8-17 μ , brown, flask-shaped, ventricose, subcylindric, forming a turf. Stipe cuticle a turf of brown caulocystidia, 40-72 x 7-12 μ , clavate to spatulate, a turf, arising from hyphae; rosettes present. Clamps none.

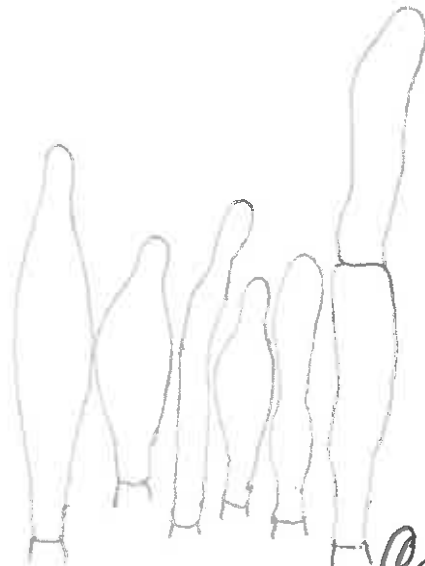
Pectarius lignyotus Fr. var. *lignyotus*
Bigelow - 5614 (Term - 35304)



Ch - x 1000



Piles - x 1000



Caulo -
x 1000

Sm-61367

Lignyotus
LACTARIUS ~~AMERICANUS~~ stat. nov.

Pike Lake, Luce Co., Michigan, August 15, 1959

Holotype (of L. picinus var. americanus)

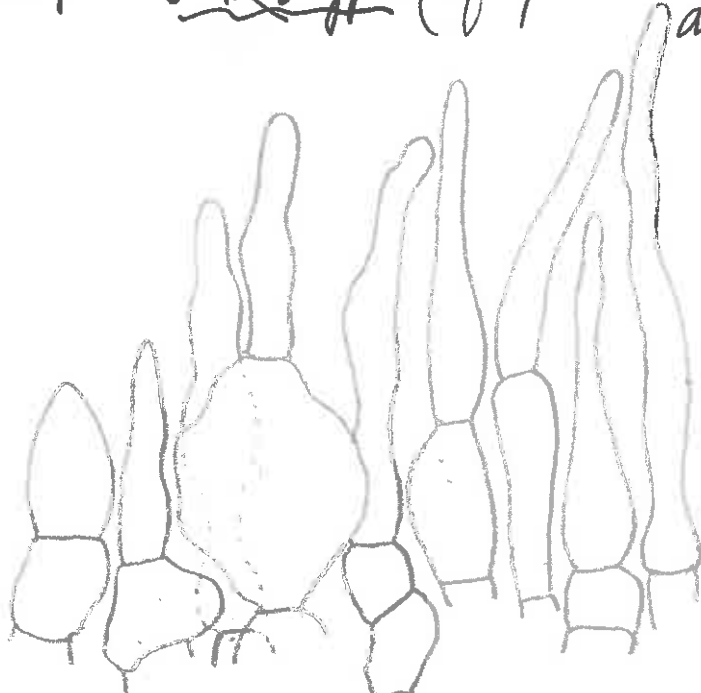
Spores 9-12 x 8-11 μ , globose or subglobose, warts 0.8-2.0 μ high, some rod-shaped and a few curved, bands broad and often greatly widened at points, forming a partial reticulum. Basidia 54-60 x 9-11 μ , 4-spered. Pleurocystidia none; pseudocystidia filamentous, scattered; cheilocystidia 38-56 x 4-7 μ , clavate, filamentous, ventricose, not abundant but conspicuous. Gill trama of short-celled, subparallel hyphae. Pileus cuticle of inflated, brown hyphal cells, 10-35 x 10-25 μ , the terminal element as a pileocystidia, 30-75 x 5-10 μ , cylindric to flask-shaped, forming a turf. Stipe cuticle with or without inflated brown cells, bearing caulocystidia, 40-115 x 4-14 μ , cylindric, flask-shaped, clavate, subfusoid, forming a turf; rosettes none observed. Clamps none.

Sactarins pieinus var. *americanus*
linguatus

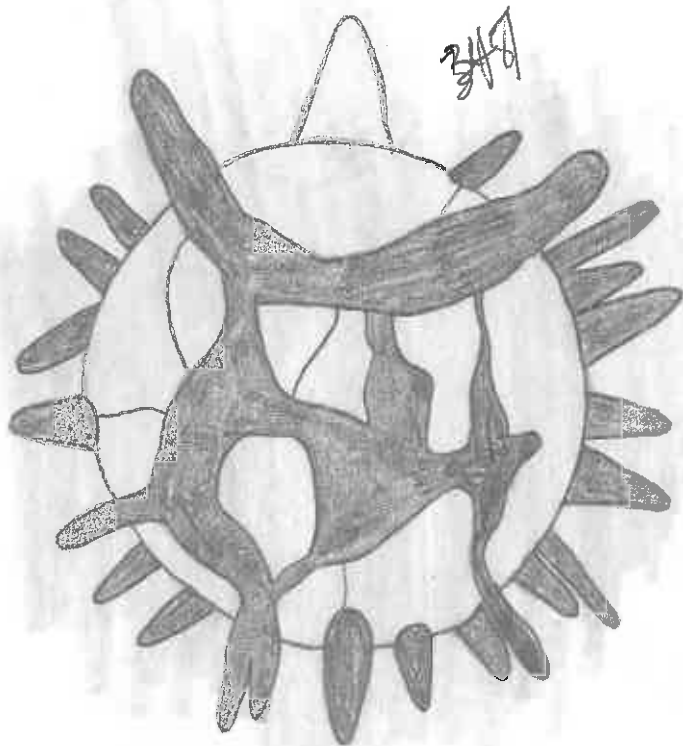
Sm-61367 - holotype (of *pieinus* v. *americanus*)



Ch - x 1000



Pileus turf - x 1000



Spore - x 8000



Caule turf - x 1000

mm

Sm-67491 LACTARIUS LIGNYOTUS var. ~~LYNCHII~~ ^{lignyotus}
Rifle River Area, Michigan, September 7, 1963.

Notes by Smith

3.5 cm broad,
Pileus ~~6.5~~ sooty brown. Lamellae distant, not marginate. Latex
dried lilac-brown on gills; wounds slowly reddish-cinnamon; taste mild.

Notes by Hesler

Spores 9-10.5 x 8-10 μ , globose to subglobose, warts 1.0-2.3 μ high,
with bands and lines, usually not forming a complete reticulum.
Pleurocystidia none; pseudocystidia conspicuous; cheilocystidia cylindric.
Cuticle of pileus and of stipe usual. Rosette cell-groups in outer
cortex of stipe.

Sm-77981 LACTARIUS LIGNYOTUS var. Lignyotus (American form)

Gorge, UMBS, Michigan, (date? 1969?) (near Lignyotus)

Smith says: taste mild; stains reddish; spores ~~pink~~ pinkish buff.

Notes by Hesler

Spores ("pinkish buff" - Smith) $9.5-11.5 \times 9.5-11 \mu$, globose or subglobose, warts $0.8-1.6 \mu$, bands wide-spaced, forming a partial to more or less complete reticulum. Basidia $52-64 \times 9-13 \mu$, (2)-4 spored. Pleurocystidia none; cheilocystidia cylindric, $33-58 \times 4-6 \mu$. Pileus cuticle of brown cells bearing a thin turf (or none), pileocystidia more or less cylindric, $32-80 \times 5-8 \mu$, brownish; also shorter and broader pyriform to vesiculose elements. Stipe cuticle of interwoven hyphae, bearing a turf of smoky caulocystidia, $34-60(80) \times 4-9 \mu$; rosettes present. Clamp connections none.

The subdistant gills and the structure of the pileus and stipe cuticles suggest L. lignyotus var. Lignyotus (American form).

Sm-78013

LACTARIUS LIGNYOTUS var. ?

Tahquamenon, Michigan, September 9, 1969

Notes by Smith

Cap snuff brown. Taste mild. Gills distant, edges concolor to faces, staining reddish.

Spores yellow.

Notes by Hesler

Spores yellow, 8-11 x 8-11 μ , globose or subglobose, warts 1.0-2.4 μ high, a few distant bands, no reticulum. Pleurocystidia only as pseudocystidia; cheilocystidia 20-48 x 5-7 μ , cylindric to subclavate. Pileus cuticle of a few repent, colorless hyphae, bearing brown pileocystidia, 22-45 x 11-13 μ , clavate, pyriform, ventricose, each arising from a cell (epicuticular). Caulocystidia 32-58 x 5-7 μ , subcylindric to subventricose, arising from a hyphal bed.

Near lignyotus var. americanus, but not quite that! Also near var. lignyotus. Needs more work.

Sm-63004

Lignyotus
LACTARIUS ~~NIGROVIOLESCENS~~ var. MARGINATUS (Sm. x Hes.) comb. nov.

Cheboygan, Michigan, Rees' Bog, August 24, 1960

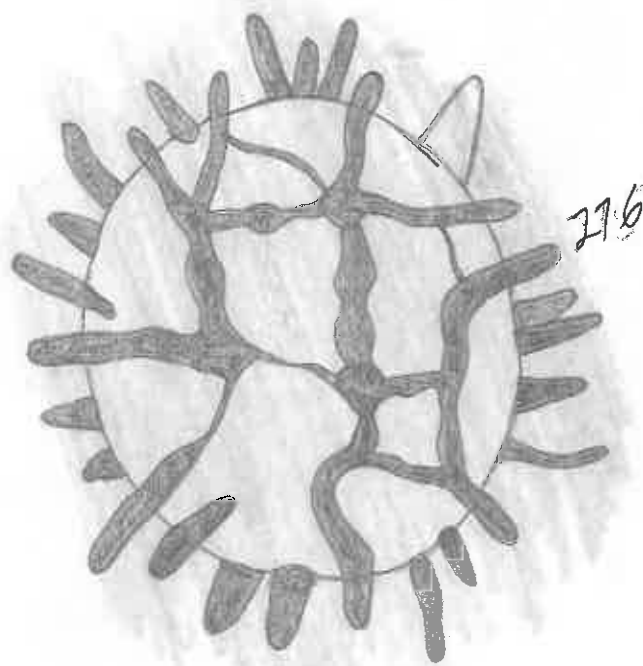
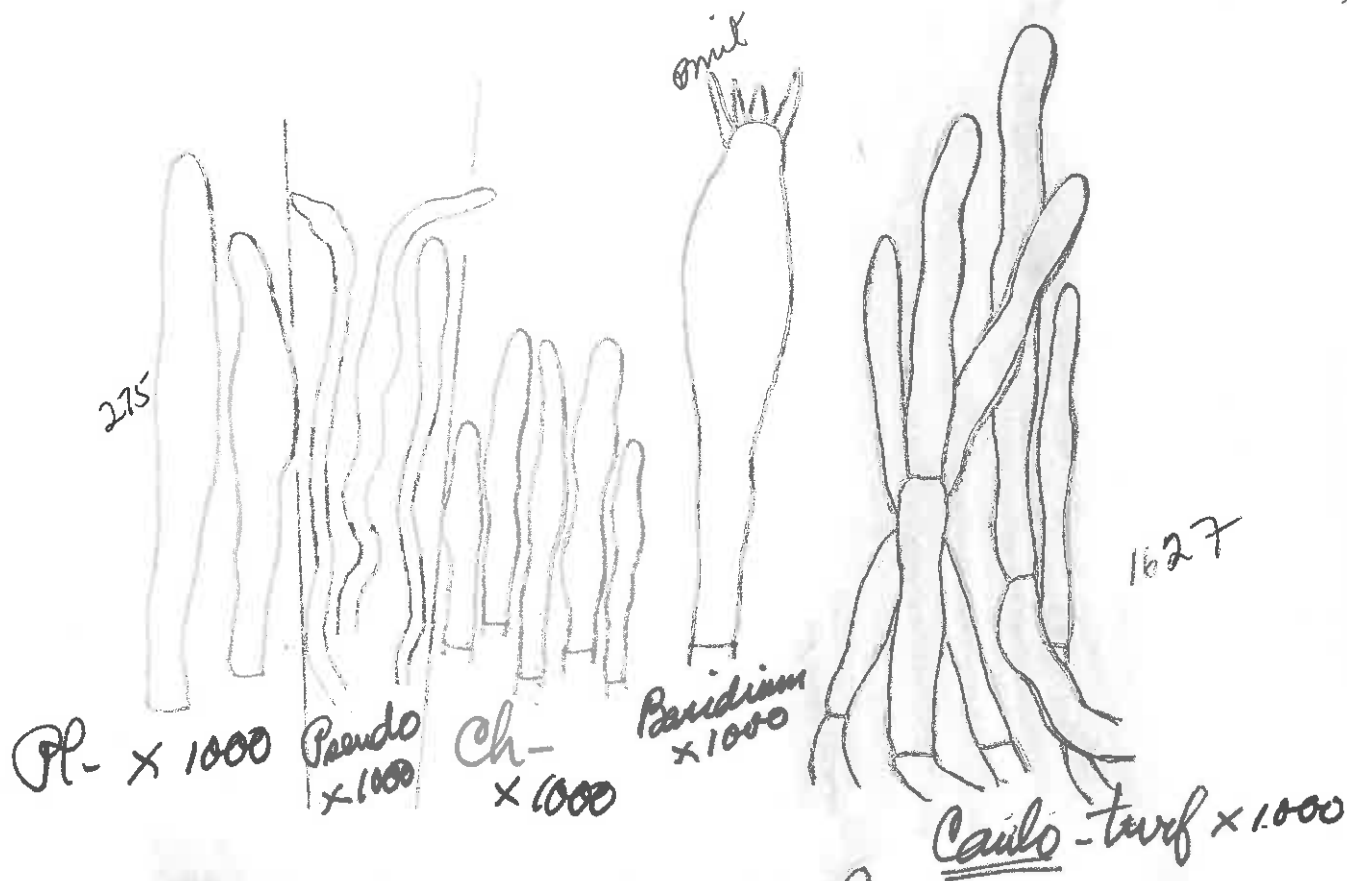
Type (of nigroviolascens v. marginatus)

Spores 9-11 x 8.5-10 μ , subglobose to globose, warts 0.6-2 μ high, bands more or less nodulose, with a few lines, forming a partial, or at times nearly complete, reticulum. Basidia 52-70 x 11-13 μ , 4-spored. Pleurocystidia 58-73 x 8-10 μ , subventricose, rare; pseudocystidia filamentous, widely scattered; cheilocystidia 30-45 x 3-5 μ , filamentous, numerous and extending up the sides some 200 μ , and there 45-60 x 4-5 μ . Gill trama of narrow, subparallel hyphae. Pileus trama vesiculose. Pileus cuticle of irregularly vesiculose to clavate, brown cells, ~~septate~~, the terminal elements forming a turf of pileocystidia, 30-65 x 5-8 μ , cylindric to subclavate; the hypodermial zone interwoven. Stipe cuticle a turf of caulocystidia, 40-75 x 4-7 μ , cylindric-filamentous; rosettes present. Clamps none.

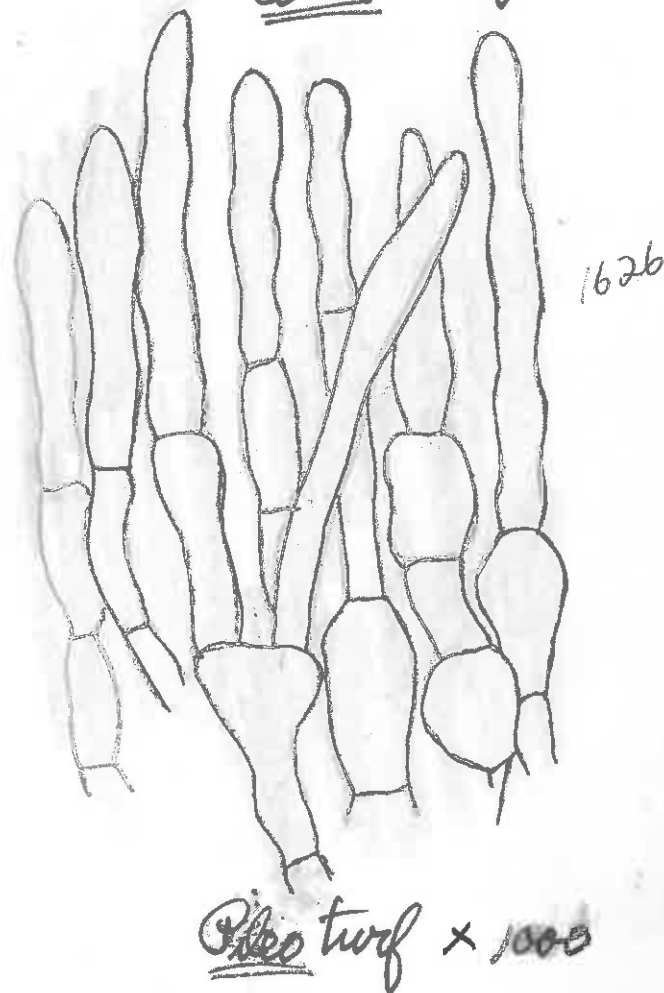
This differs from var. nigroviolascens in its (63004) dark gill-margins, longer basidia, slightly different-shaped pileocystidia, and its acrid taste.

This might be elevated to a species.

Pactarius ~~*nigrovirens*~~ ^{*scamptus*} var. *marginatus*
 Sm-63004 - Holotype (of *nigrovirens* var. *marginatus*)



Spore - x 8000



Sm-78650

Lagystus
LACTARIUS ~~NIGROVIOLASCENS~~ var. MARGINATUS

Canyon Lake Swamp, Marquette Co., Michigan, August 27, 1970

Labelled L. nigroviolascens; the gill edges are dark-brownish.

Micro characters as in Type.

Legnysotus
LACTARIUS ~~NIGROVIOLASCENS~~ (Atkinson) var. NIGROVIOLASCENS
apud Burlingham Mycologia 24:461. 1932

Illustrations:

Burlingham, Mycologia 24, fig. 2, and 3 (2).

Smith and Hesler, Brittonia 14, pl. 18 (lower), figs. 1-2.

Pileus 3-5 cm broad, expanding, slightly depressed then deeply so from uplifted margin, at first blackish brown (bistre), or "mummy brown," then umber and tawny olive as it expands, usually remaining darker in the center, pruinose, more or less rugose, margin incurved at first, at length with short striae and crenate. Context white. Latex white, slowly changing to blackish violet, as do all wounds of the pileus, gills, or stipe, abundant (less so in old basidiocarps), pungent (not acrid).

Lamellae adnate, decurrent, in short lines, white, become ochraceous, in age usually darker, subdistant, medium broad.

Stipe 5-6 cm long, 4-6 mm thick, chocolate or concolorous with the pileus, minutely and densely tomentulose.

Spores ochroleucous t-1 (Burlingham), 8-11 x 7-9 μ , ellipsoid to subglobose, warts 0.8-2.0 μ high, broad or medium bands and lines forming a reticulum. Basidia 36-42 x 8-10 μ , 4-spored. Pleurocystidia 20-25 x 5-6 μ , flask-shaped[?] (very rare to absent!); cheilocystidia 34-50 x 3-6 μ , filamentous or cylindric, rare. Gill trama of subparallel hyphae and a

few sphaerocysts. Pileus trama vesiculose. Cuticle of pileus of 2-3 layers of more or less isodiametric, brownish cells, the surface cells usually growing upward to form a turf of pileocystidia, 24-68 x 6-12 μ , base enlarged, with more or less a long neck. Cuticle of stipe of repent hyphae, bearing a turf of erect caulocystidia, 20-50 x 3-9 μ , filamentous, clavate, flask-shaped. Clamp connections none.

HABIT, HABITAT, AND DISTRIBUTION - On soil, in woods, New York, July-August.

MATERIAL STUDIED - NEW YORK: Atkinson 24257 (CU), Ithaca, Coy Glen, July 23, 1917.

OBSERVATIONS - Burlingham states that it closely resembles L. Lignyotus but differs in the color changes in the latex and flesh. Her color notes are from Repertoire de Couleurs. Her drawings of spores fail to show the reticulum.

(See our description in Brittonia 14:376-378).

Also a detailed descr. of it by Singer (1945)

now - Lignystus var. nigroviolascens

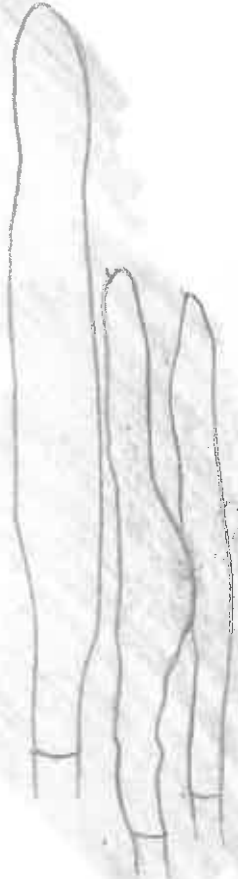
LACTARIUS NIGROVIOLASCENS Atkinson var. NIGROVIOLASCENS

Ithaca, N. Y., Atkinson-24257, July 23, 1917

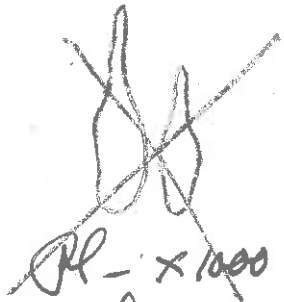
Type

Spores [ochroleucous t-1 (Burlingham)], 8-11 x 7-9 μ , broadly ellipsoid to globose or subglobose, warts 0.8-2.0 (3.0) μ high, broad or medium bands and lines forming an incomplete reticulum. Basidia 42-63 x 8-11 μ (2)4-spored. Pleurocystidia none; pseudocystidia present; cheilocystidia 34-50 x 3-6 μ , filamentous or cylindric. Gill trama of subparallel, short-celled hyphae. Pileus trama vesiculose. Cuticle of pileus of 2-3 layers or more or less isodiametric, brownish cells, the surface cells usually growing upward to form a turf of pileocystidia, 24-68 x 6-12 μ , base enlarged, with more or less a long neck. Cuticle of stipe of repent hyphae, bearing a turf of erect caulocystidia, 20-50 x 3-9 μ , filamentous, clavate, flask-shaped. Clamp connections none.

Sactarius lignyotus ~~*negrolascent*~~ ^{Attk. var. *nigroviridescens*}
Type (Cornell - 24257, NYBG)



213



~~Pl - x 1000~~



Ch - x 1000

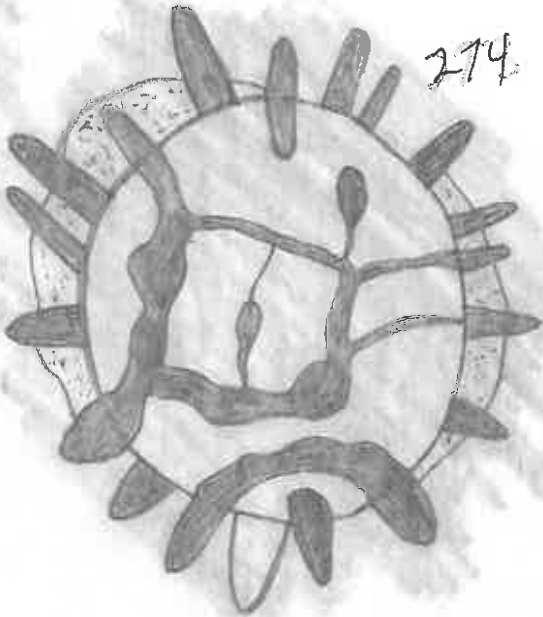
(These are doubtful!)

~~omit~~



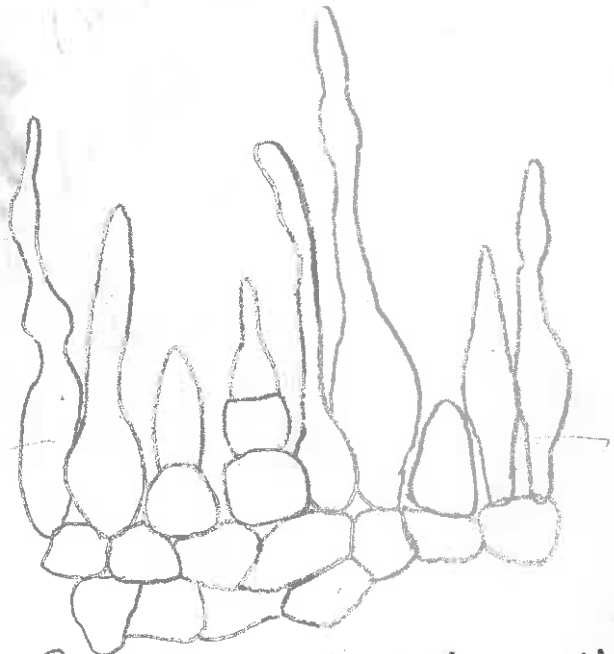
Carlo?

Ch - x 2000



214

Spore - x 8000



Pileo-turf on cellular cuticle
x 1000

Lignyotus

N. J. Smith - 1402 ~~LACTARIUS NIGROVIOLASCENS~~ var. NIGROVIOLASCENS

In sphagnum, under cedar, Marquette County, Michigan, August 10, 1968

Notes by N. J. Smith

Pileus slightly depressed, margin downcurved, papillate, finely velvety-pruinose, rich brown (Methuen 6-E-5 to 6-F-6). Latex white, milky, turning (staining?) deep purple. Odor mild, taste mildly fungoid.

Lamellae subdecurrent, ochraceous to buff, near 5-A-2 (Methuen) (staining purple?) (subdistant, edges concolor).

Stipe concolor, pruinose.

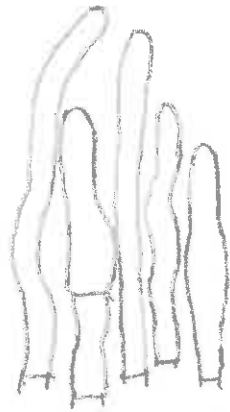
Spore deposit: light to warm buff.

Notes by Hesler

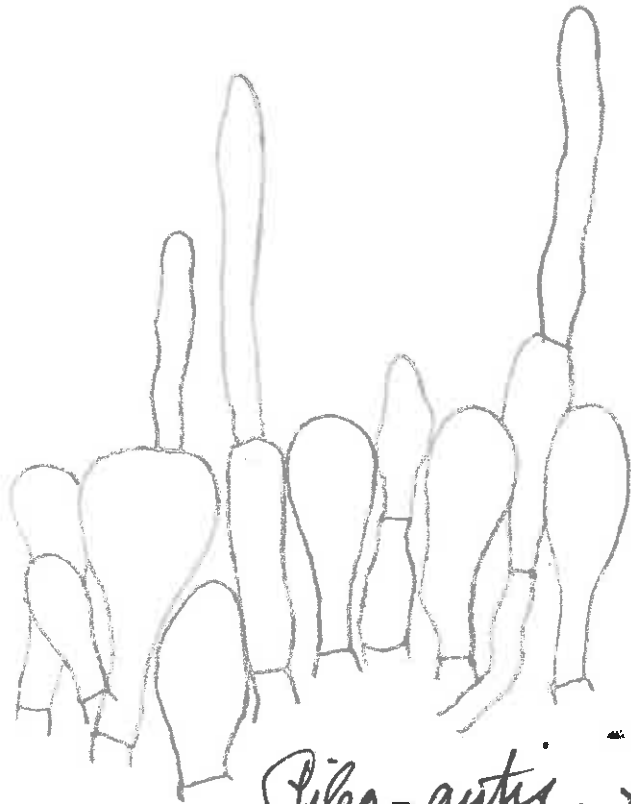
Spores 8.5-10.5 x 8.5-10.5 μ , globose or subglobose, warts 0.8-1.7 μ high, often slender, webbing often present, at times obscure. Basidia 46-52 x 10-12 μ , 4-spored. Pleurocystidia none; cheilocystidia 30-52 x 4-6 μ , filamentous, projecting. Pileus cuticle a zone of brownish, vesiculose or clavate to subclavate cells, arranged in a palisade, some bearing slender pileocystidia, 25-50 x 4-6 μ , the subcuticular zone of interwoven hyphae. Stipe cuticle of interwoven hyphae bearing a turf of brown caulocystidia, 32-60 x 3-5 μ , cylindric or subclavate; rosettes present. Clamp connections none.

This is distinguished by its white latex turning purplish, mild taste, and its palisade-like pileus cuticle.

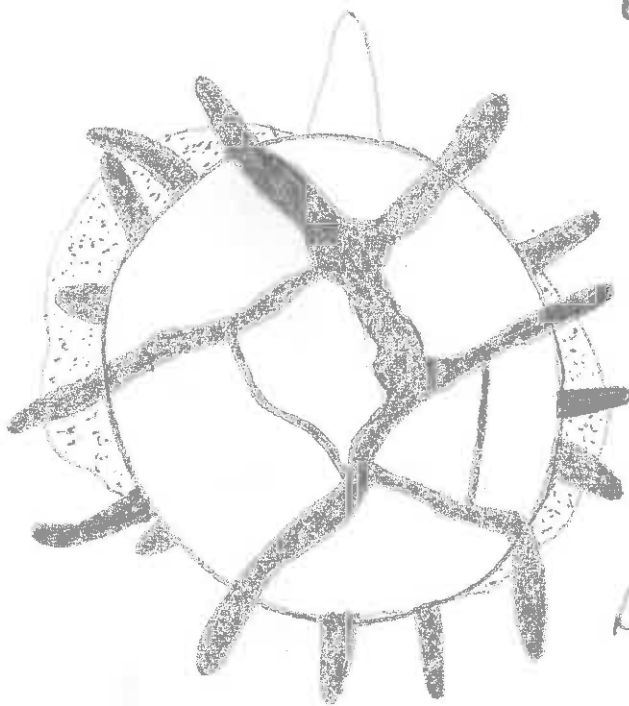
Lactarius ~~purpurascens~~ sp. not.
nigroviolaceus var. *nigroviolaceus*
 N.J. Smith - 1402 - *liquyotus*



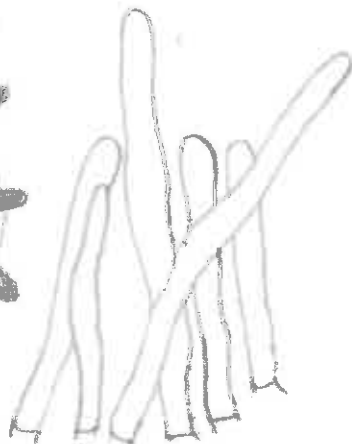
ch -
 x 1000



Pileo-cutis - x 1000



Spore - x 8000



Caule - x 1000



Sm 63956- *Lactarius lignyotus* var.
nigroviolaceus

Lignyptus

Sm-67573-A LACTARIUS NIGROVIOLASCENS var. NIGROVIOLASCENS

Rifle River Area, Rose City, Michigan, September 7, 1963

Notes by Smith

Cap bistre. Latex drying violaceous-brown, no staining when cut. Taste mild.

Lamellae distant, broad, edges not marginate.

Stipe 5-6 mm thick, bistre.

Spores in deposit: ochraceous.

Notes by Hesler

Spores 9-11 x 8.5-11 μ , globose or subglobose, warts 1.0-2.6 μ long, coarse or slender, bands and lines an incomplete, or rarely complete, ^{reticulum} with a slight webbing. Basidia 57-70 x 10-12 μ , 4-spored. Pleurocystidia none; pseudocystidia filamentous, 2-3.5 μ broad, scattered; cheilocystidia 30-44 x 3-6 μ , more or less filamentous, scattered. Pileus cuticle a zone of vesiculose, brown cells, at times in a row, the terminal cell with a prolongation, pileocystidium, 18-54 x 4-6 μ . Stipe cuticle of more or less interwoven hyphae (extending vertically) bearing a turf of pale brown caulocystidia, 27-80 x 5-10 μ , cylindric and at times flexuous, often ventricose. Rosettes present. Clamps none.

legnyotus
Sm-67573-b LACTARIUS NIGROVIOLASCENS var. NIGROVIOLASCENS

Rifle River, Rose City, Michigan, September 7, 1963

Notes by Smith

Cap bistre. Taste mild. Latex milk-like, drying lilac-brown on gills. Gills ochraceous, distant, not marginate.

Spores in deposit: yellowish.

Notes by Hesler

Micro characters as in Sm-67573a.

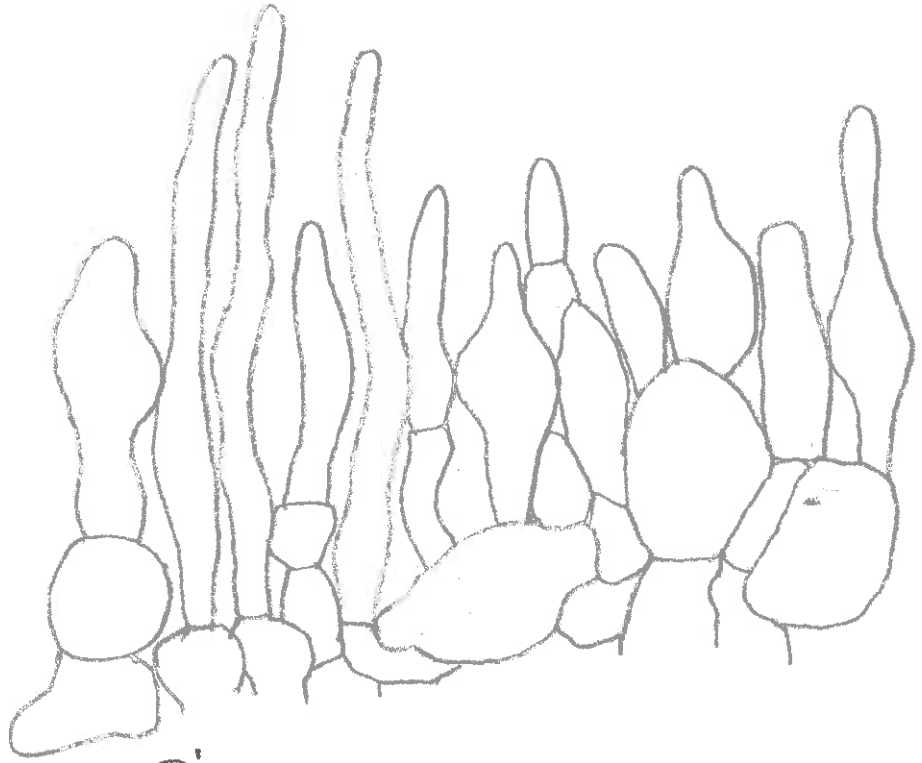
Lactarius

Sm-67670 LACTARIUS ~~NIGROVIOLASCENS~~ var. NIGROVIOLASCENS

Rees Bog, Michigan, September 20, 1963

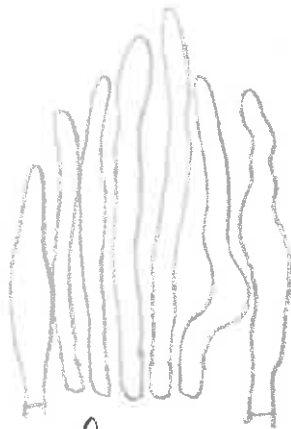
Spores 8.5-12 x 8-10.5 μ . Basidia 54-65 x 10-12 μ ,
(2)4-spored. Pleurocystidia none; pseudocystidia present;
cheilocystidia 37-50 x 3-5 μ , filamentous. Rosettes in
stipe. Pileus cuticle of brownish, irregularly palisade-
like to vesiculose cells, bearing paler brown pileocystidia,
30-75 x 5-14 μ , cylindric, ventricose, or flask-shaped,
forming a turf.

Pectinaria lignyotus
~~*nigroviolaceus*~~ var. *nigroviolaceus*
SM-67670

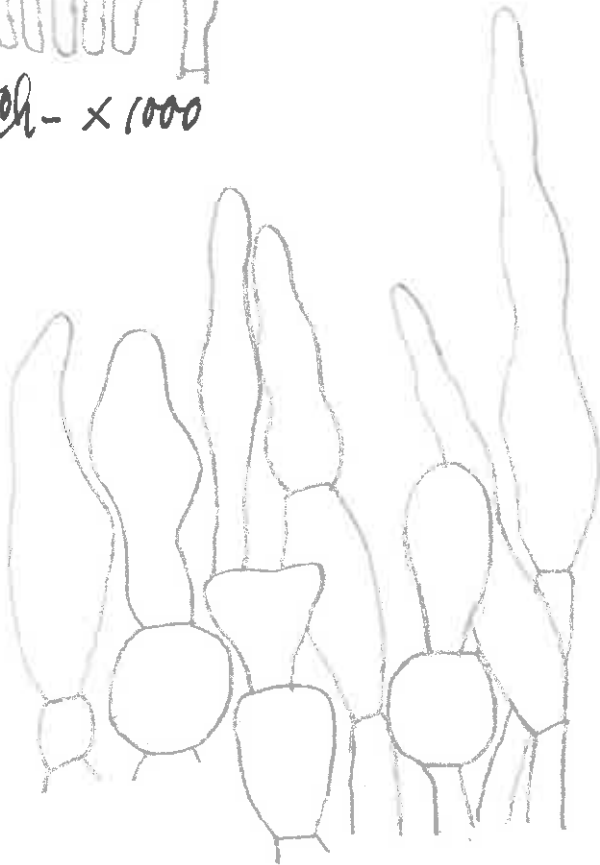


Pileus cuticle - x 1000

Lignyotus
Pactarius ~~nigrovolascens~~ var. *nigrovolascens*
Sm - 67670



Ch - x 1000



Piles turf - x 1000

Sm-77190

Lignyotus
LACTARIUS ~~NIGROVIOLASCENS~~ var. nigrovirescens

Gregarious, in white-cedar/black-spruce-balsam forest,

Luce C., Mich., July 19, 1962

Spores 8.5-11 x 7.5-9.5 μ , warts 0.7-1.8 (2) μ high,
otherwise as in Type.

Factarius ^{*leucostus*} ~~*nigrovirens*~~ var. *nigrovirens*

Jm-77190



Caulo - turf - x 1000

Sm-78620

Lignyotus
LACTARIUS ~~NIGROVIOLASCENS~~ var. NIGROVIOLASCENS

Ives Lake Area, Marquette Co., Michigan, August 27, 1970

Notes by Hesler

Spores (ochraceous-Smith) $8.5-11(12) \times 8-10(12) \mu$, warts $1.5-2.7 \mu$.
Pleurocystidia none; cheilocystidia cylindric, $27-53 \times 3-5 \mu$. Cuticle of
pileus and stipe as described in Brittonia 14:377.

LACTARIUS LILACINUS (Lasch) Fr.

(Translation from Neuhoﬀ, 1956)

Fungi in old alder stands, especially of alder-Bruckwälder, often cespitose, with lilac-rosy, in the center of old (ones) rusty-yellowish, with appressed felty-small-scales on the cap and flesh-color-ocher-yellowish stipe.

Pileus 3-8(10) cm broad, rather thin-fleshed, at first plane-convex, center soon depressed, many in age becoming lobed on margin; margin at first strongly inrolled, with about 1 mm long inflexed, whitish pubescence, glabrous, in age large portions wrinkled or distinctly and distantly grooved (striate?); pileus surface usually dry, azonate or rarely with a wet dark zone near the margin or ~~half~~ half-way to center, finely felty, with loose floccose scales on the center, stoutly scaly, appressed, along the margin often wine-red bodies develop in groups standing together, (but) in age the margin mostly glabrous; color essentially lilac-carmine-red to a delicate flesh-colored lilac or silver-gray-lilac, fading to rosy-flesh or bright rosy-gray, in the center in age mostly rusty-reddish, finally sometimes flesh-colored-leathery-yellow; bruised areas mostly unchanged, rarely dark-violet-brown.

Stipe 4-6(9) x 4-8(20) mm, cylindric, at the base mostly somewhat bent, not rarely. A little enlarged below, base with whitish or creamy mycelium, apex floccose, ocher yellow to orange-brownish, with a flesh-tone, never with the lilac-color of the cap, bruised areas foxy.

Lamellae adnate, sometimes with a tooth, sickel-shaped usually almost distant, 2-4 mm broad, with short ones intermixed, the long ones rarely forked, at first pale isabelline, then ocher-yellow-flesh-colored, finally darker, often with an orange-yellow appearance, whitish from the spores, where bruised pale-ocher to gray-green.

Latex rather sparse, most copious in the gills, white to milk-like whitish, mild or very slightly acrid on the tongue and burning in the throat, hardening sparsely to gray-green on the lamellae. Flesh in the cap whitish, in the stipe dingy pale ocher, somewhat acrid only a long time after (taking a) bite, here and there at length yellowish-green colored, when fresh with a slight odor (as in Russula fellea mixed with L. camphoratus), after a year's drying with a chicory-like odor, at length pleasant as in L. helvus. Guaiack colors the flesh gray-green immediately, guaiacol orange-flesh colored to dingy lilac-rosy in 30 min, FeSO_4 dingy flesh-reddish, HNO_3 soon flesh-reddish-brown, after 2 Std. dingy green, with KOH in the flesh small noteworthy coloration, the cap immediately dark-olive-green.

Spores in fresh deposits: B-C (paler than in L. helvus, in age creamy-yellowish (C), ellipsoid, 7.5-8.5(10) x 6-7.5 μ , with small warts which mostly are bound together by a reticulum. Basidia 40-50 x 8-10 μ , mostly 4-spored.

Cheilocystidia more numerous than pleurocystidia, rather sparse, spindle-like, acuminate, more rarely the apex rounded, 60-75 x 6-10 μ , projecting up to 2.5 μ , dark-blue in SV. Epicutis 30-50 μ thick, of repent hyphae 3-4 μ thick.

ILLUS: Bres. T 388; Pieschel Z. ~~øf/ø~~ f. P: XIII T4
(good photo).

Lange's illus. is L. spinosulsus.

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(Translation from Neubhoff, 1956)

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Pileus 3-8(10) cm broad, rather thin-fleshed, at first plane-convex, center soon depressed, many in age becoming lobed on margin; margin at first strongly inrolled, with about 1 mm long inflexed, whitish pubescence, glabrous, in age large portions wrinkled or distinctly and distantly grooved (striate?); pileus surface usually dry, azonate or rarely with a wet dark zone near the margin or ~~half~~ half-way to center, finely felty, with loose floccose scales on the center, stoutly scaly, appressed, along the margin often wine-red bodies develop in groups standing together, (but) in age the margin mostly glabrous; color essentially lilac-carmine-red to a delicate flesh-colored lilac or silver-gray-lilac, fading to rosy-flesh or bright rosy-gray, in the center in age mostly rusty-reddish, finally sometimes flesh-colored-leathery-yellow; bruised areas mostly unchanged, rarely dark-violet-brown.

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Lamellae adnate, sometimes with a tooth, sickel-shaped usually almost distant, 2-4 mm broad, with short ones intermixed, the long ones rarely forked, at first pale isabelline, then ocher-yellow-flesh-colored, finally darker, often with an orange-yellow appearance, whitish from the spores, where bruised pale-ocher to gray-green.

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Cheilocystidia more numerous than pleurocystidia, rather sparse, spindle-like, acuminate, more rarely the apex rounded, 60-75 x 6-10 μ , projecting up to 2.5 μ , dark-blue in SV. Epicutis 30-50 μ thick, of repent hyphae 3-4 μ thick.

ILLUS: Bres. T 388; Pieschel Z. ~~øf/v~~ f. P: XIII T4
(good photo).

Lange's illus. is L. spinosulsus.

LACTARIUS LILACINUS/SPINOSULSUS

Moser's Key(1967:375)

6. Cap more or less dark lilac rosy to red, in age the color of flesh fading, 5-15 cm. Stipe flesh-color-pcher, Spores white. Bres. 388.....L. lilacinus
6. Cap pale lilac-carmine-rosy, with strong erect scales, 2-6 cm. Stipe concolorous or paler. Spores ocher-yellow, 8-8.5 x 5.5-6.5 μL. spinosulsus

Kühner-Romagnesi Key(1953:478)

Pileus rosybrick(lateritious), lilac, or vinaceous.
Latex white-opaque(and not clear like water).
Flesh sweet then peppery. Under Alder.

- E) Pileus about 5 cm, not zoned, very soon tomentose-floccose, margin white pruinose(or finely villous under lens), Stipe x 6-12mm. Spores 7.5-8 x 5.5-6 μ , not zebra-like, but reticulate.....L. lilacinus
- E) Pileus 1.5-3 cm., ~~maxillate~~ mamillate, occasionally zoned, margin elegantly fringed under a lens, finely bristly-spiny, often ribbed. Stipe x 3.5-5 mm, rosy-lateritious (brick colored). Lamellae creamocher flesh. Spores 8-8.5 x 5.5-6.5 μ~~L. spinosulsus~~
L. spinosulsus

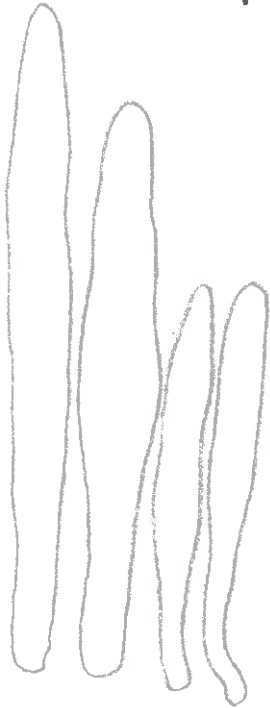
LACTARIUS LILACINUS

Clondeboye, England, Co. Down., B.M.S. Foray, Sept.
14, 1948. (Ex-Kew Herb.)

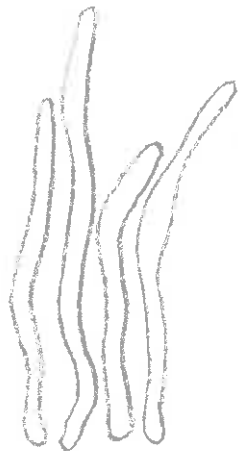
Spores 7-9 x 6-7 μ , ellipsoid, warts 0.4-0.8 μ high,
otherwise like Coker-3316 (Lactarius griseus Form A).
Pleurocystidia 52-88 x 6-10 μ , cylindric-subventricose,
granular, hyaline in S-formol; cheilocystidia 38-75 x
5-7 μ , similar. Gill trama cellular. Pileus trama
vesiculose. Cuticle repent, with hyphal tufts (scales).
Caulocystidia 23-30 x 3-5 μ , clavate, subventricose,
scattered.

Pectarius lilacinus

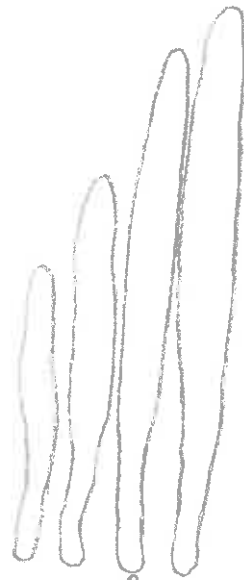
Clondeboy, England, C. Down., B.M.S. Foray
Sept 14, 1948. ex-Herb. Kew.



Pl. $\times 1000$

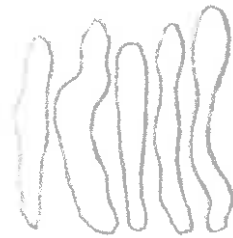


Pseudo- $\times 1000$



Ch- $\times 1000$

[spores as in
Coker 3316,
Form A]



Cauls - $\times 1000$

Rytehock (un-numbered) LACTARIUS LILACINUS (Lasch) Fr.

Drimmelen, The Netherlands, October 15, 1959, det. Bas. (Herb. Riden)

Notes by Bas (Transl. by Donk)

Cap 29-35 mm, shallow funnel-shaped with a flat margin, with or without a poorly developed umbo, faded lilac-pink, finely plush-like or with granular small scales in the center, more felted near margin. Context pale brownish cream with pink under the cap-pellicle, soft, slowly somewhat sharp, odor fruity. Latex white, sharp (according to collector).

Lamellae decurrent, pale ocher flesh color pink, white pruinose, moderately crowded, rather narrow.

Stipe 30-40 x 5-8 mm, pale brownish flesh ocher, center faded pinkish ocher brown, apex with ridges from the gills; pruinose above, subfelted to glabrous below, base somewhat tomentose, becoming spongy.

Notes by Hesler

Micro characters as in Rytehock coll., Drimmelen, November 3, 1959 (Tenn-35611).

Verschuren - not numbered LACTARIUS LILACINUS (Lasch) Fr.

Limburg, The Netherlands, October 10, 1962, det. Bas (Herb. Feiden)

Notes by Bas (Transl. by Donk)

Cap 20-40 mm, at first dark faded vinaceous (Expo H 12, F 14) soon paler (Expo E 14, D 12, 14, 18, C 16, 24, 23, usually with an ocher tint in center C 26), under a lens granular tomentose, appearing whitish tomentose when young, then more or less glabrous but center usually remaining squamulose-granular, the small scales occasionally even somewhat brownish. Flesh slightly tinted pinkish, finally in stalk salmon; odor sweetish-fruity (as in Russula odorata). Latex white, scant, sharp.

Gills decurrent, ocher with a slight pink hue, crowded, narrow, often forked.

Stalk 30-45 x 5-9 mm, salmon ocher, base more yellowish salmon (Expo 56), apex more foxy-salmon, terete or slightly thickened downward.

Notes by Hesler

Micro characters as in Rytehock (Tenn - 35611), except pileus cuticle shows scales more distinctly.

30383

LACTARIUS LILACINUS sensu Neuhoff

In marsh, under Alnus, North Holland, Netherlands, leg. Huijsman,
October 10, 1948.

Notes by Hesler

Spores 7-9(9.5) x 5.5-7 μ , warts 0.3-0.6 μ high, bands forming a partial or no reticulum, no zebroid pattern (similar to 35611).
Pleurocystidia 54-75 x 7-10 μ , ventricose, apices either more or less tapering or rounded; cheilocystidia 37-56 x 6-9 μ , similar. Pileus cuticle of repent hyphae. Stipe cuticle of repent hyphae; rosettes present.

Pileus brownish (dried), with minute fasciculate scales.

Notes by Huijsman

Milk white, mild. Very small specimen. I have larger ones from France, but these are not in good state. The sent specimen found in a marsh under Alnus glutinosa.

Lactarius lilacinus (Fock) Fr. senec Nees
30383 (Huijsman)



1608

Pileus entire - with
a tuft (hyphae + pilei) - x 1000

Tenn - 35611

Rytehock (un-numbered) LACTARIUS LILACINUS (Lasch) Fr.

In marshy peat with several species of deciduous trees, Drimmelen, The Netherlands, November 3, 1959, det. C. Bas.

Notes by Bas (Transl. by Donk)

Cap 21-56 mm, to deeply funnel-shaped, occasionally plano-convex with funnel-shaped center, lilac-pink to lilac-red-brown. Odor not fruity, related to Pelargonium; taste insignificant, somewhat sharp, with pleasant after-taste. Latex whitish, scant.

Gills pale ocher flesh color to rather intensely ocher tinted flesh colour, rather often forked, nearly subdistant, medium broad.

Stipe 20-65 x 4-12 mm, at first pale ocher yellow tinted somewhat pink, then darker, spotty flesh colour brown, terete to longitudinally compressed with some furrows.

Notes by Hesler

Spores 7-9.5 x 5.5-7 μ , warts variable: 0.2-0.6 μ , a few isolated, bands and branches forming a partial or rarely a complete reticulum (no zebra-like pattern, as in L. spinosulus). Pleurocystidia 48-63 x 7-9 μ , subventricose, apices conic, granular, wide scattered (not abundant), and mostly on lower half of gill; cheilocystidia 40-58 x 6-8 μ , similar, scattered. Gill trama of variable sized cells. Pileus cuticle of repent, dry hyphae, at intervals bearing fascicles of hyphae (fibrillose scales). Stipe cuticle of repent, dry hyphae; rosettes not found. Clamp connections none.

Lactarius lilacinus (Kaeck) Fr.

Rytehoek (Drimmelen, Holland, Nov. 3, '59)

ex-herb. Reiden

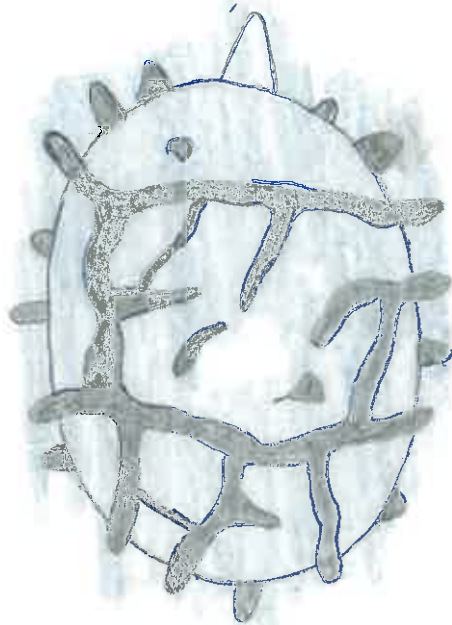
Tenn-35611



Pl. x 1000



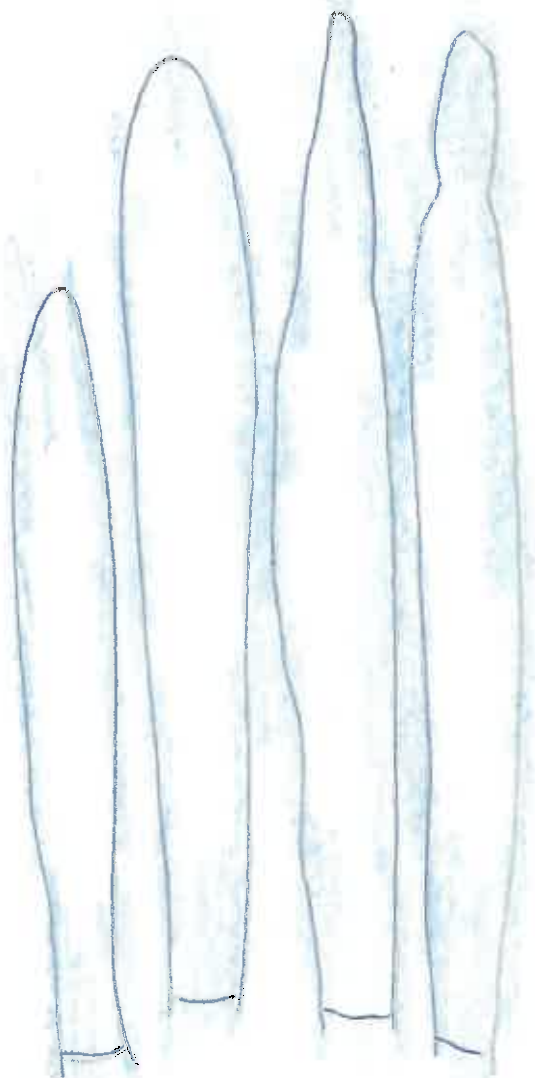
Ch. x 1000



10/12

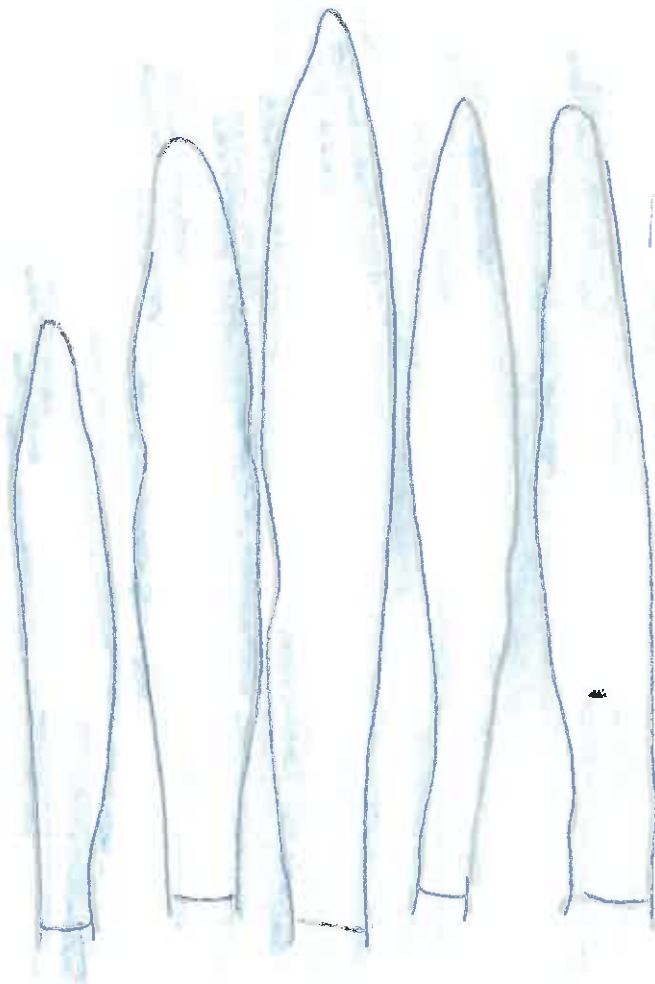
Spore - x 8000

L. lilacinus (Lesch) Fr.



1013

Pl - x 2000



1014

Ch - x 2000

LACTARIUS LIMACINUS Murr.

Under live oak, Sugarfoot, near Gainesville, Florida, July 11, 1938

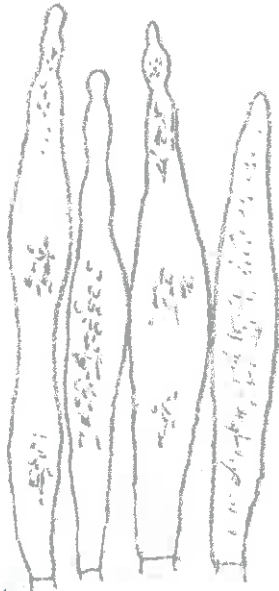
Type (F-18002, of praeviscidus Murr.)

Notes by Hesler

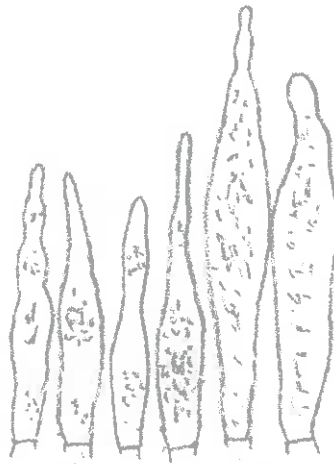
Spores 8.5-11 x 8-9.5 μ , ellipsoid to broadly so or subglobose, warts 0.8-1.4 μ high, with broad bands and fine lines, forming a partial reticulum. Basidia 40-52 x 10-12 μ , 4-spored. Pleurocystidia 48-78 x 6-12 μ , scattered, ventricose, apices rounded or subcapitate; cheilocystidia 42-56 x 7-9 μ , ventricose, apices subcapitate. Gill trama cellular. Pileus trama vesiculose. Pileus cuticle a zone (130-250 μ thick) of gelatinous hyphae; no pileocystidia. Stipe of dry, repent hyphae; caulocystidia none. Clamp connections none.

Actinurus limacinus Beards. + Burl.

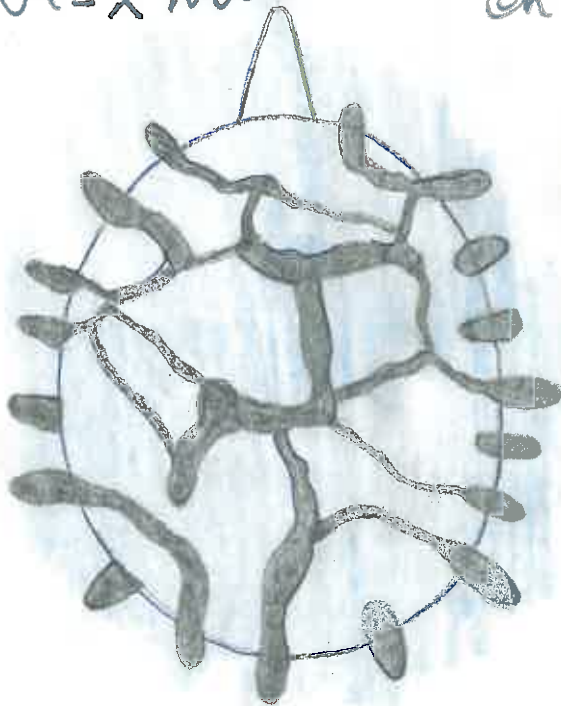
Type



Pl - x 1000



Ch - x 1000

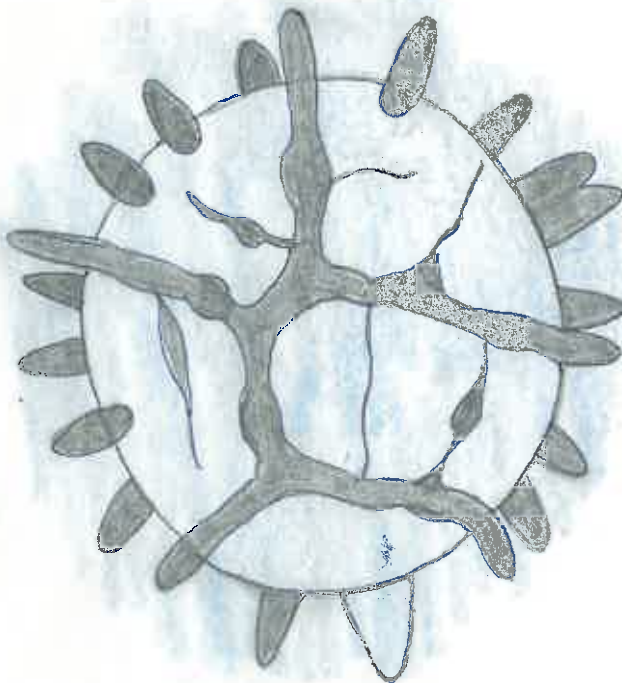
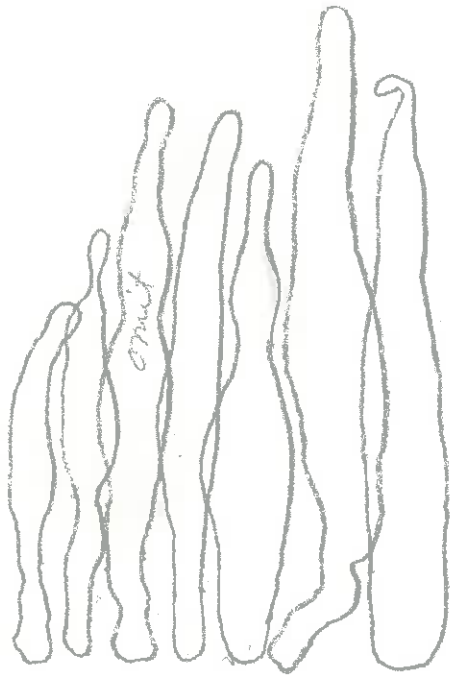


Spore x 8000

870

119

Factarius ~~*praevisoides*~~ *lunaticus* n. sp.
 Type ^{of *praevisoides*} (Tenn - 30378)



883

Spore x 8000